

Service Manual

Dolby NR-Equipped
Stereo Cassette Deck

Cassette Deck
RS-B465



Color

(K)... Black Type

Area

Country Code	Area	Color
(E)	Continental Europe.	(K)
(EB)	Great Britain.	
(EG)	F.R. Germany and Italy.	



* HX Pro headroom extension originated by Bang Olufsen and manufactured under license from Dolby Laboratories Licensing Corporation.
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RS-B755 MECHANISM SERIES (AR350)

SPECIFICATIONS

CASSETTE DECK SECTION

Deck system	Stereo cassette deck
Track system	4-track, 2-channel
Heads	
Rec/Play	Permalloy Head
Erasure	Double-gap ferrite Head
Motors	
Capstan drive	DC servo motor
Reel table drive	DC motor
Recording system	AC bias
Bias frequency	80 kHz
Erasing system	AC erase
Tape speed	4.8 cm/sec. (17 7/8 ips)
Frequency response	
NORMAL	30 Hz~15 kHz (±3 dB) 30 Hz~15 kHz (DIN)
CrO ₂	30 Hz~16 kHz (±3 dB) 30 Hz~16 kHz (DIN)
METAL	30 Hz~17 kHz (±3 dB) 30 Hz~17 kHz (DIN)
S/N (signal level=max recording level, CrO ₂ type tape)	
Dolby C NR on	74 dB (CCIR)
Dolby B NR on	66 dB (CCIR)
Dolby NR off	56 dB (A weighted)

Wow and flutter	0.07% (WRMS) ±0.2% (DIN)
Fast forward and rewind times	Approx. 90 seconds with C-60 cassette tape
Input sensitivity and impedance	
MIC	0.25 mV/600Ω~10 kΩ
LINE IN	60 mV/47 kΩ
Output voltage and impedance	
LINE OUT	400 mV/800Ω
HEADPHONES	30 mV/8Ω (8Ω~600Ω)

GENERAL

Power consumption	16 W
Power supply	
For Continental Europe, F.R. Germany and Italy	AC 50/60 Hz, 220 V
For Great Britain	AC 50/60 Hz, 240 V
Dimensions (W×H×D)	430×125×290mm (16 15/16"×4 15/16"×11 13/32")
Weight	4.3 kg (9.5 lb.)

Note:

Specifications are subject to change without notice.
Weight and dimensions are approximate.

Technics

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Central P.O. Box 288, Osaka 530-91, Japan

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ACCESSORIES

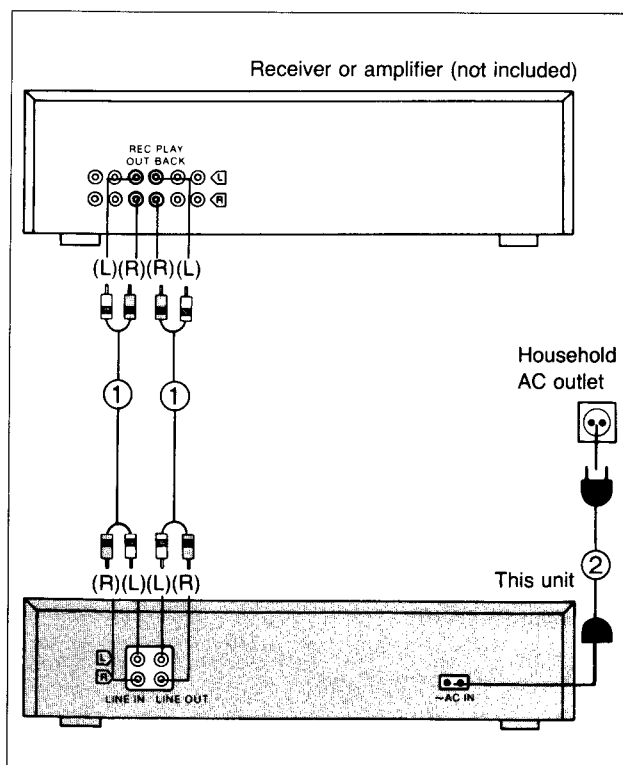
- AC power supply cord 1
 [(SFDAC05E03)... (E, EG)]
 [(SJA193-1)..... (EB)]

- Stereo connection cables..... 2
 (SJP2249-3)

CONNECTIONS

Make connections in the numbered sequence by using the included cables.

- 1 Connect the stereo connection cables.
- 2 Connect the AC power supply cord.

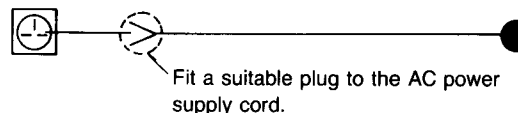


AC power supply cord (2)

The configuration of the AC outlet and AC power supply cord differs according to area.

For United Kingdom

Household AC outlet



Placement hints

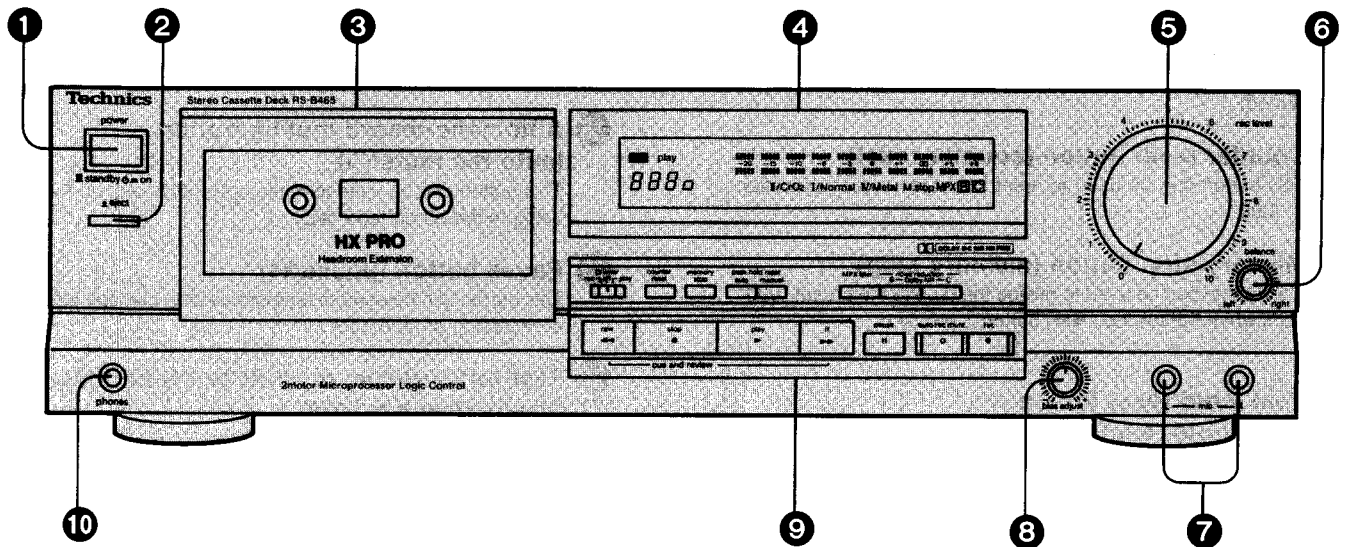
If this unit is placed near a receiver or a tuner, a "hum" noise may be heard during tape playback, recording, or AM reception of the receiver or the tuner.

If this occurs, leave as much space as possible between the units, or place them where there is the least amount of "hum".

Note:


This unit is a precision instrument. Be sure to place it on a flat surface.

FRONT PANEL CONTROLS AND FUNCTIONS



Control section

1 Power “standby /on” switch (power/ standby on)

This switch switches ON and OFF the secondary circuit power only. The unit is in the “standby” condition when this switch is set to the standby  position. Regardless of the switch setting, the primary circuit is always “live” as long as the power cord is connected to an electrical outlet.

2 Eject button (eject)

This button can be used to open the cassette holder.

3 Cassette holder

4 Display section

5 Recording-level control (rec level)

This control can be used to regulate the recording level.

6 Recording-balance control (balance)

This control can be used to balance the left and right sound levels during recording.

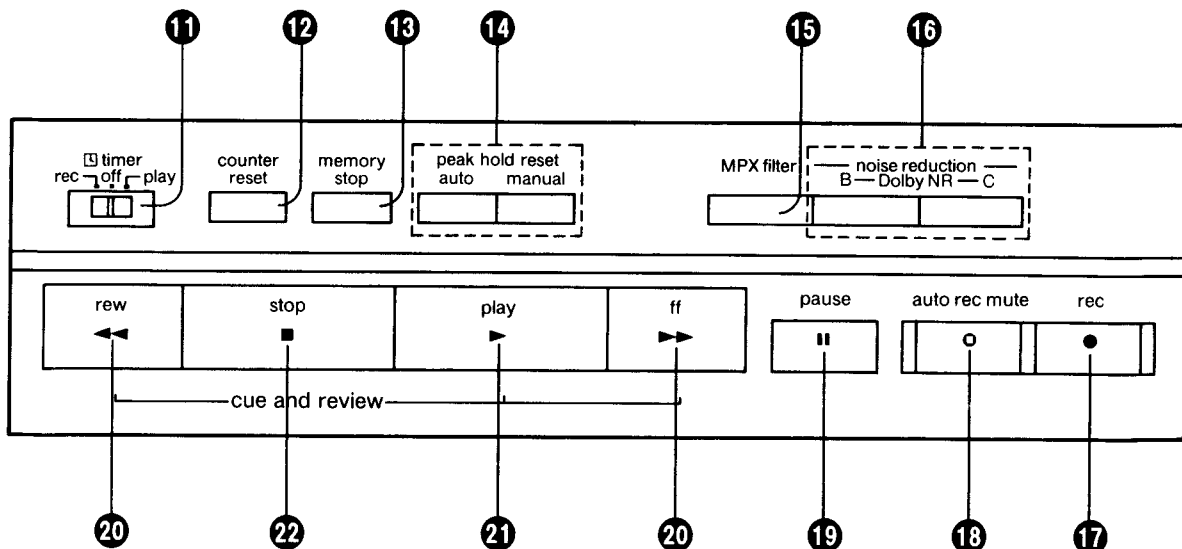
7 Microphone jacks (mic)

8 Bias-adjustment control (bias adjust)

The frequency response for each tape type can be equalised by using this control.

9 Operation section

10 Headphones jack (phones)



Operation section

11 Timer switch (⏰ timer)

This switch is used to automatically begin a tape recording or tape playback at a certain time, selected by a timer (not included).

12 Counter reset button (counter reset)

This button can be used to reset the tape counter indication to "000".

13 Memory-stop button (memory stop)

This button can be used to rewind the tape to the preset "000" point when the rewind (◀◀) button is pressed.

14 Peak hold reset button (peak hold reset auto/manual)

auto: The peak level of the source is held and displayed for approximately one second at a time.

manual: The peak level of the source is held and displayed continuously.
To reset the peak hold function, press this button once again.

15 Multiplex filter switch (MPX filter)

This prevents the Dolby circuit from operating in error when FM stereo broadcasts are recorded using the noise reduction function.

16 Dolby noise-reduction buttons (noise reduction)

These buttons can be used to reduce the hiss noise that is characteristic of tape. This unit is provided with both the Dolby B NR-type and C NR-type noise-reduction systems.

17 Record button (rec/●)

This button can be used to change the tape deck to the recording stand-by mode.

18 Automatic-record-muting button (auto rec mute/□)

This button can be used to make a silent interval on the tape being recorded on tape deck.

19 Pause button (pause/||)

This button can be used to temporarily stop the tape playback or recording of tape deck.

20 Fast-forward/cue, rewind/review buttons (cue/review/▶▶/◀◀)

These buttons can be used to advance or rewind the tape. During playback these buttons are used to cue or review while listening to the contents at high speed.

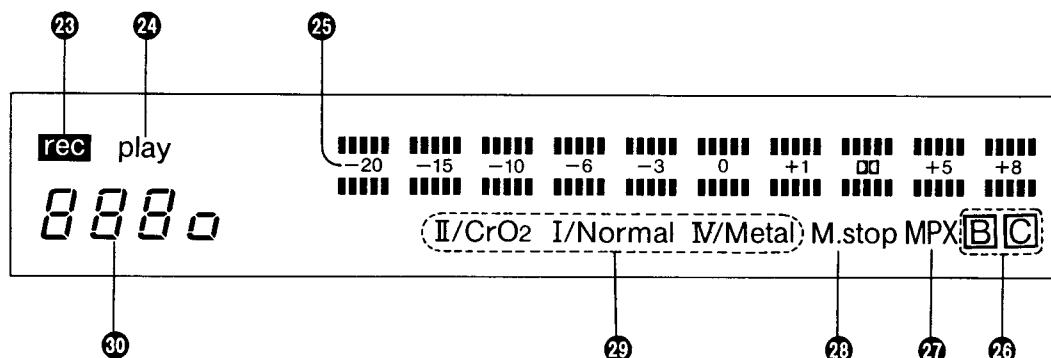
21 Playback button (play/▶)

This button can be used to start the playback or recording of the cassette.

(The tape will then begin moving in the left-to-right direction.)

22 Stop button (stop/■)

This button can be used to stop tape movement.



Display section

23 Recording indicator (rec)

This indicator illuminates to indicate that this tape deck is in the recording stand-by mode, or is recording.

24 Playback indicator (play)

When this indicator illuminates steadily, it indicates that this tape deck is in the playback mode or the recording mode. When it flashes continually, this is an indication that this tape deck is in the pause mode or the recording stand-by mode.

25 Input level meter

During playback, this meter indicates the level of the recorded sound.
During recording, it indicates the level being recorded, adjusted by the recording-level control.

26 Dolby noise-reduction indicators (B, C)

Each indicator illuminates to show the type of Dolby noise-reduction system selected by pressing one of the Dolby noise-reduction buttons.

27 Multiplex filter indicator (MPX)

Illuminates to indicate that the multiplex filter is set to "on".

28 Memory-stop indicator (M.stop)

This indicator illuminates to indicate that this tape deck is in the memory stop mode.

29 Tape-select indicators

The type of tape being used will be automatically detected and the indicator will illuminate.

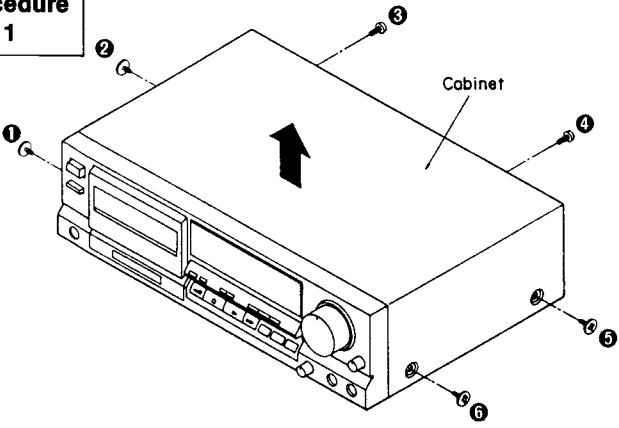
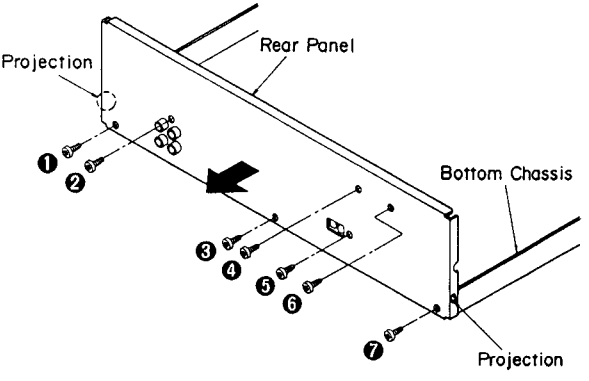
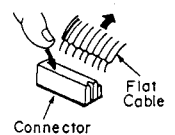
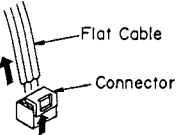
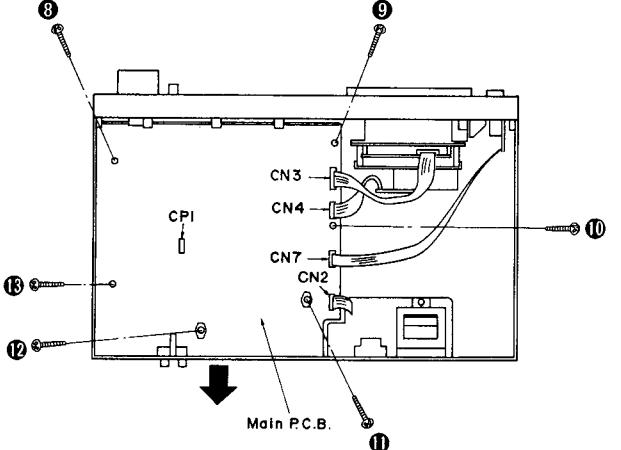
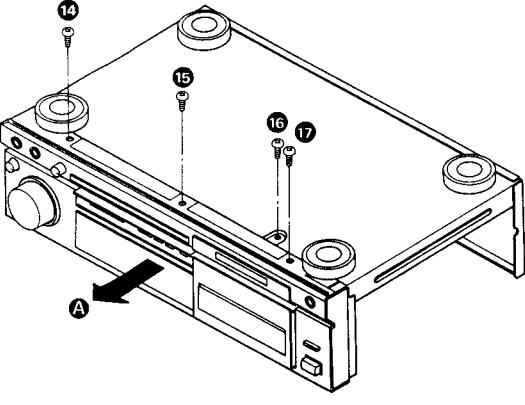
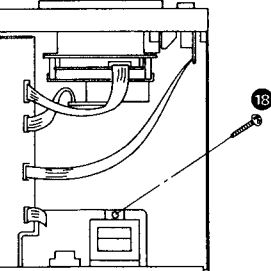
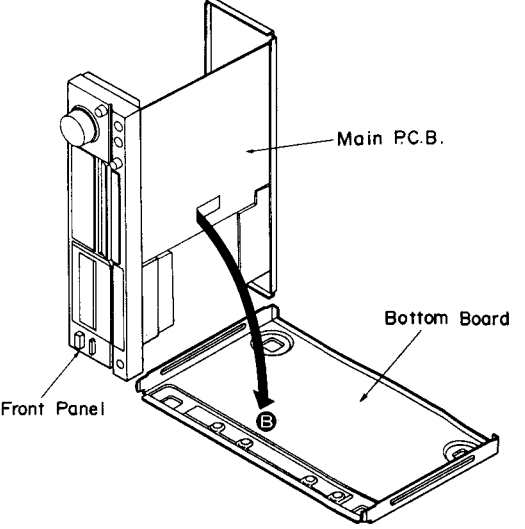
30 Tape counter

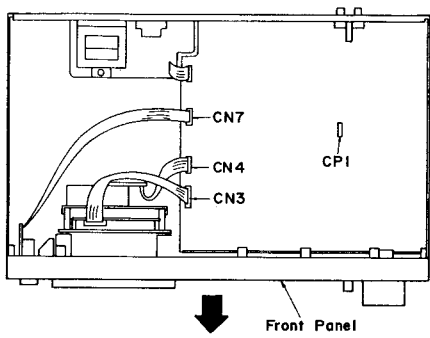
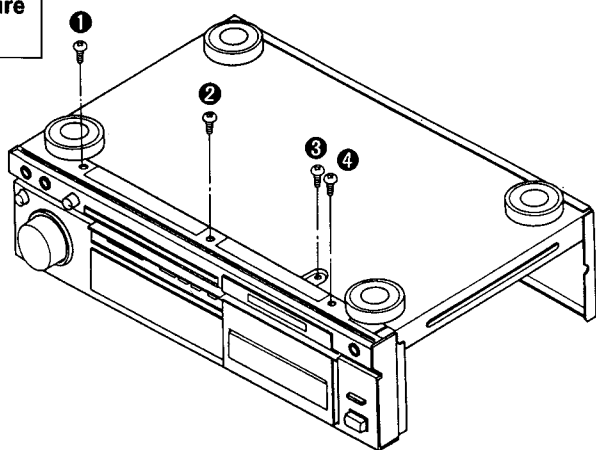
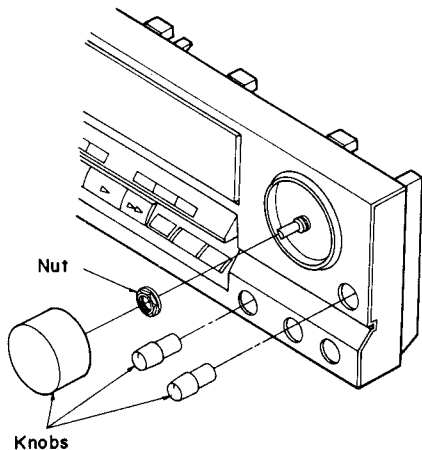
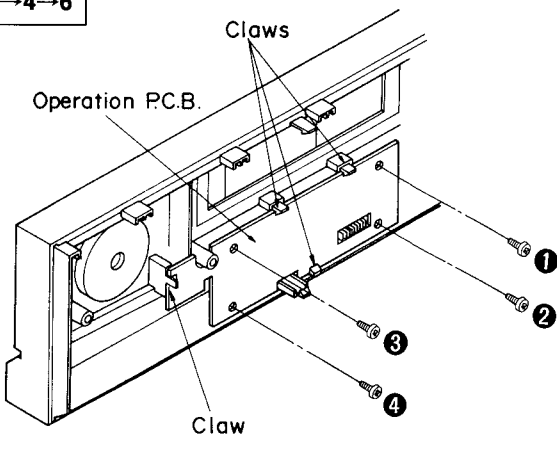
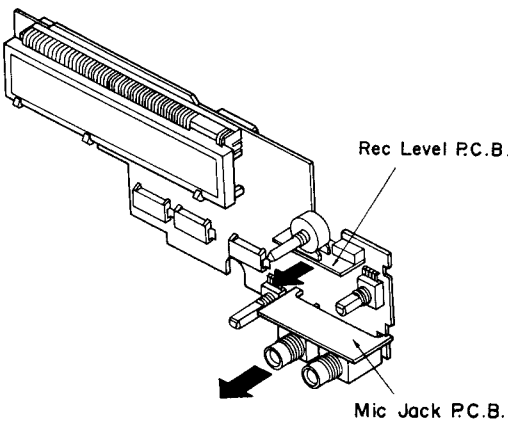
Indicates the amount of tape movement.

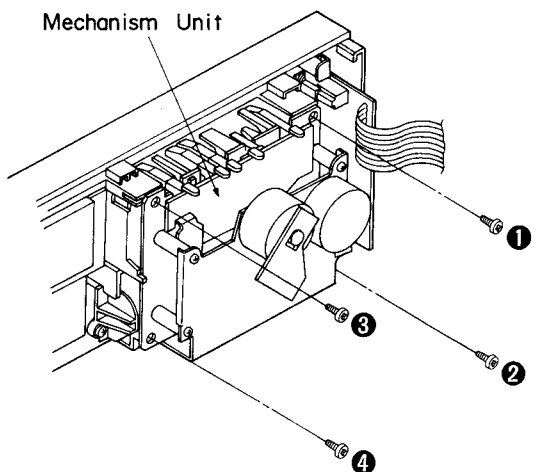
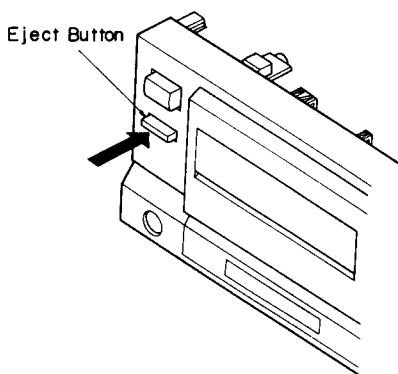
DISASSEMBLY INSTRUCTIONS

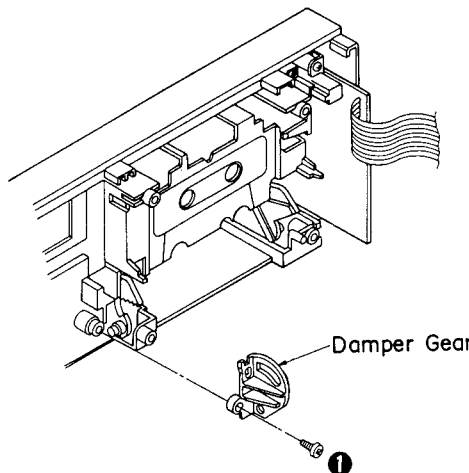
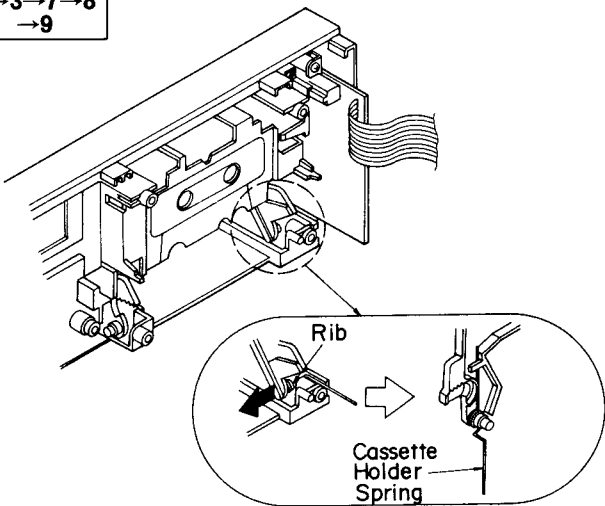
"ATTENTION SERVICER"

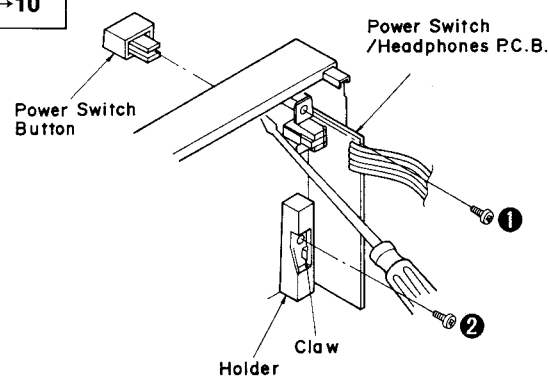
Some chassis components may have sharp edges. Be careful when disassembling and servicing.

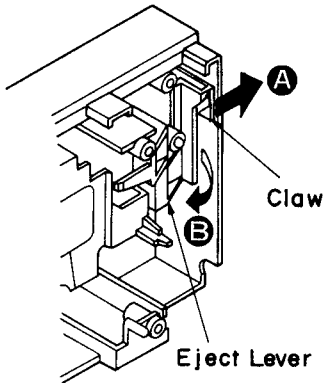
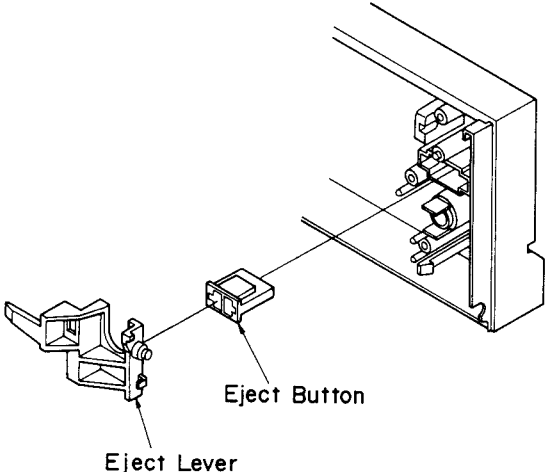
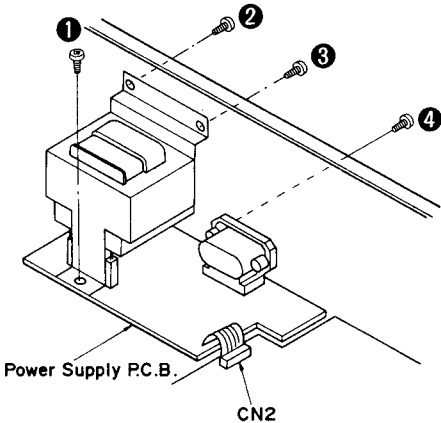
Ref. No. 1	Removal of the cabinet	Ref. No. 2	Removal of the main P.C.B.
Procedure 1	 <p>• Remove the 6 screws (①~⑥).</p>	Procedure 1→2	<p>1. Remove the 7 screws (①~⑦). 2. Remove the rear panel from the projection of the bottom chassis.</p> 
	<p>3. Remove the 6 screws (⑧~⑬). 4. Remove the 1 connector (CP1). 5. Remove the 4 flat cables (CN2, CN3, CN4, CN7). 6. Remove the main P.C.B. in the direction of the arrow.</p>		
	<h4>How to remove the flat cable</h4>		
	<p>• Pull out the flat cable while pressing the connector.</p>  <p>1. Lift the connector. 2. Pull out the flat cable.</p> 		
	<h4>How to check the main P.C.B.</h4>		
	<p>• When checking the soldered surfaces of main P.C.B. and replacing the parts, do as show.</p> <p>1. Remove the 9 screws (①, ③, ⑦~⑬) in above figure. 2. Remove the 5 screws (⑭~⑱). 3. Remove the front panel in the direction of the arrow A.</p>		<p>4. Remove the bottom board in the direction of the arrow B. 5. Reinstall the front panel to the main P.C.B.</p>
			

Ref. No. 3	Removal of the front panel	<p>2. Remove the 1 connector (CP1).</p> <p>3. Remove the 3 flat cables (CN3, CN4, CN7).</p>  <p>4. Remove the front panel in the direction of the arrow.</p>
Procedure 1→3	 <p>1. Remove the 4 screws (①~④).</p>	 <p>3. Remove the 6 screws (①~⑥).</p> <p>4. Release the 2 claws.</p> <p>5. Remove the FL drive P.C.B. in the direction of the arrow.</p>
Ref. No. 4	Removal of the FL drive P.C.B.	<p>1. Pull out the 3 knobs.</p> <p>2. Remove the 1 nut.</p>
Ref. No. 5	Removal of the rec level P.C.B. and mic jack P.C.B.	<p>Ref. No. 6</p> <p>Removal of the operation P.C.B.</p> <p>Procedure 1→3→4→6</p>  <p>1. Remove the 4 screws (①~④).</p> <p>2. Release the 4 claws.</p>
Procedure 1→3→4→5	 <p>■ Removal of the rec level P.C.B.</p> <ul style="list-style-type: none"> Remove the rec level P.C.B. in the direction of the arrow. <p>■ Removal of the mic jack P.C.B.</p> <ul style="list-style-type: none"> Remove the mic jack P.C.B. in the direction of the arrow. 	

Ref. No. 7	Removal of the mechanism unit		
Procedure 1→3→7			
1. Push the eject button.		2. Remove the 4 screws (①~④).	

Ref. No. 8	Removal of the damper gear	Ref. No. 9	Removal of the cassette holder
Procedure 1→3→7→8		Procedure 1→3→7→8→9	
• Remove the 1 screw (①).			

Ref. No. 10	Removal of the power switch/ headphones P.C.B.		
Procedure 1→3→10			

Ref. No. 11	Removal of the eject lever and eject button	
Procedure 1→3→10 →11		
	 <p>1. Push the claw in the direction of the arrow A. 2. Remove the eject lever in the direction of the arrow B.</p>	 <p>3. Pull out the eject button.</p>
Ref. No. 12	Removal of the power supply P.C.B.	
Procedure 1→12		
	<p>1. Remove the 1 flat cable (CN2). 2. Remove the 4 screws (1~4).</p>	

MEASUREMENT AND ADJUSTMENT METHODES

Measurement Condition

- Rec. level control; Maximum
- Timer stand-by switch; Off
- Noise reduction select switch; Off
- MPX filter switch; Off

Measuring instrument

- EVM(Electronic Voltmeter)
- Oscilloscope
- Digital frequency counter
- AF oscillator

Test tape

- Head azimuth adjustment (8kHz, -20dB); QZZCFM
- Tape speed adjustment (3kHz, -10dB); QZZCWAT
- Playback frequency response (315Hz, 12.5kHz, 10kHz, 8kHz, 4kHz, 1kHz, 250Hz, 125Hz, 63Hz, -20dB); QZZCFM

- Balance control; Center
- Make sure heads are clean
- Make sure capstan and pressure roller are clean
- Judgeable room temperature $20\pm5^{\circ}\text{C}(68\pm9^{\circ}\text{F})$

- ATT(Attenuator)
- DC voltmeter
- Resistor (600Ω)

- Playback gain adjustment (315Hz, 0dB); QZZCFM
- Overall frequency response, Overall gain adjustment
Normal reference blank tape; QZZCRA
CrO₂ reference blank tape; QZZCRX
Metal reference blank tape; QZZCRZ

HEAD AZIMUTH ADJUSTMENT

1. Playback the azimuth adjustment portion (8 kHz, -20 dB) of the test tape (QZZCFM). Vary the azimuth adjusting screw until the outputs of the L-CH and R-CH are maximized and the lissajous waveform, as illustrated, approaches 0 degrees.

Note: If L-CH and R-CH are not maximized at the same point, adjust to the point where the levels of each channel are maximized and equal.

2. Perform the same adjustment in the play mode.
3. After the adjustment, apply screwlock to the azimuth adjusting screw.

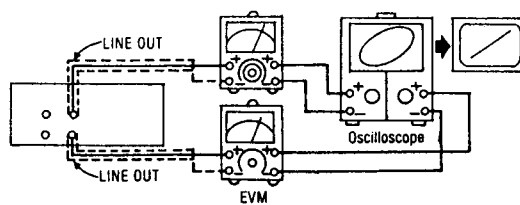


Fig.1

Record/Playback Head

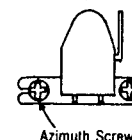


Fig.2

TAPE SPEED ADJUSTMENT

1. Playback the middle portion of the test tape (QZZCWAT).
2. Adjust the **VR901** so that the output is within the standard value.

Standard value: $3000 \pm 15\text{Hz}$

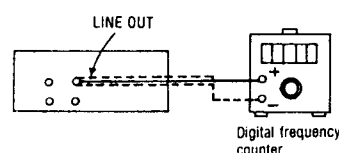


Fig.3

PLAYBACK GAIN ADJUSTMENT

1. Playback the gain adjusted portion (315 Hz, 0 dB) of the test tape (QZZCFM).
2. Adjust **VR1** (L-CH) and **VR2** (R-CH) so that the output is within the standard value.

Standard value: $0.4\text{V} \pm 0.5\text{dB}$

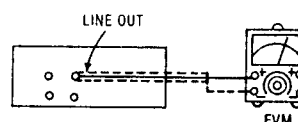


Fig.4

PLAYBACK FREQUENCY RESPONSE

1. Playback the frequency response portion (315 Hz, 12.5 kHz ~ 63 Hz, -20 dB) of the test tape (QZZCFM).
2. Assure that the frequency response is within the range shown in Fig. 6 for both L-CH and R-CH.

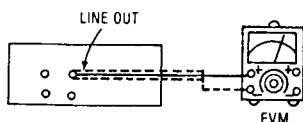


Fig.5

Playback frequency response chart

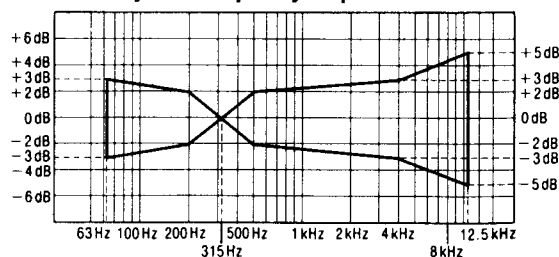


Fig.6

OVERALL GAIN ADJUSTMENT

1. Insert the Normal blank test tape (QZZCRA) and set the unit to the Record pause mode.
2. Apply a reference input signal (1 kHz, -24 dB). Attenuate the output so that its level becomes **0V**.
3. Record this input signal.
4. Playback the signal recorded in step 3 above, and assure that the output is within the standard value.
5. If it is not within the standard value, adjust **VR3** (L-CH) and **VR4** (R-CH).
6. Repeat the step 2 ~ 5 above until the output is within the standard value.

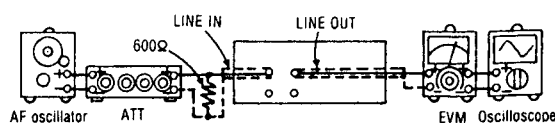


Fig.7

Standard value: $0.4\text{V} \pm 0.5\text{dB}$

OVERALL FREQUENCY RESPONSE

1. Insert the a Normal blank test tape (QZZCRA) and set the unit to the Record Pause mode.
2. Apply a reference input signal (1 kHz, -24 dB) through an attenuator.
3. Attenuate the signal by 20 dB and adjust the frequency from 50 Hz ~ 10.0kHz.
4. Record the frequency sweep.
5. Playback the recorded signal and assure that it is within the range shown in **Fig.8** in comparison to the reference frequency (1 kHz).
6. If it is not within the standard range, adjust **VR301** (L-CH) and **VR302** (R-CH) so that the frequency level is within the standard range.
7. Repeat steps 2 ~ 6 above using the CrO₂ tape(QZZCRX) and the Metal tape(QZZCRZ) increasing the frequency range to 12.5kHz (50Hz~12.5kHz).
8. Assure that the level is within the range shown in **Fig.9**.

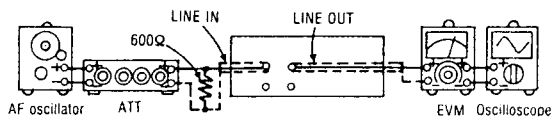


Fig.10

Normal Overall frequency response chart (NR OUT)

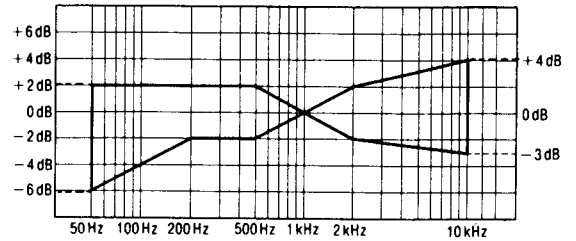


Fig.8

CrO₂-Metal Overall frequency response chart (NR OUT)

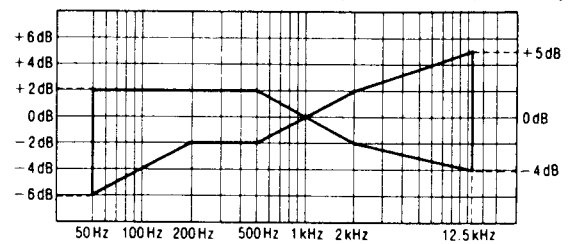
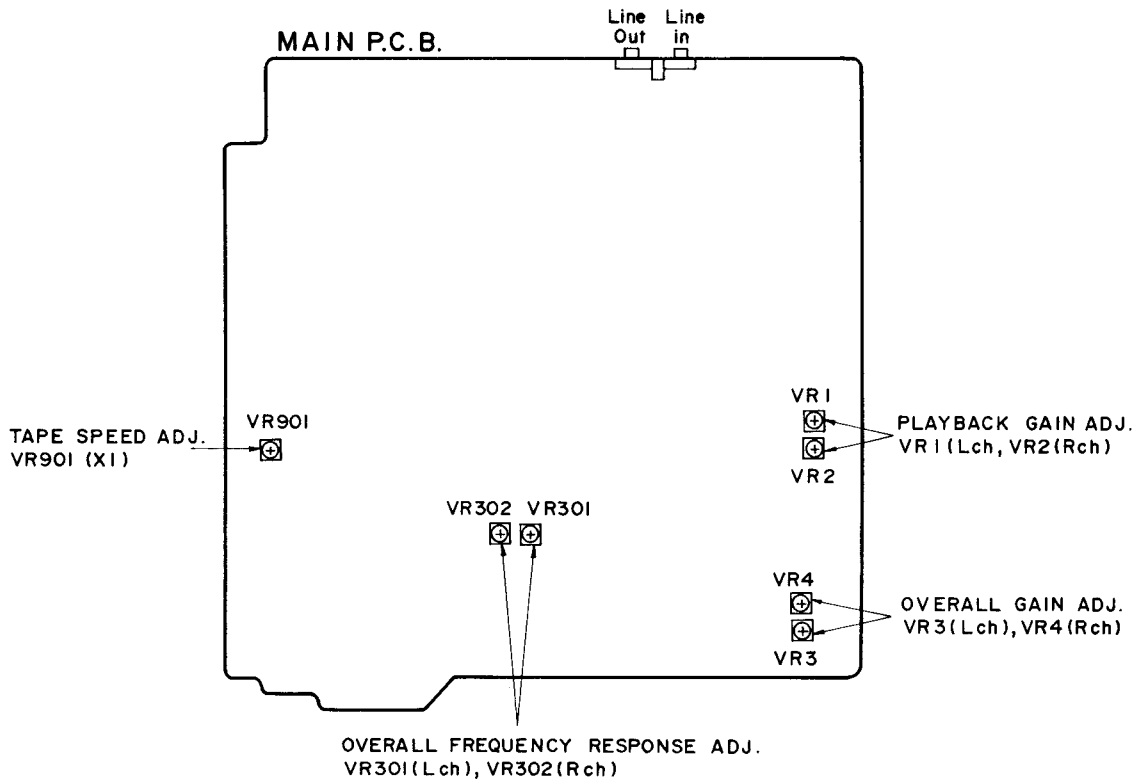


Fig.9

• Adjustment points



■ TERMINAL FUNCTION OF IC

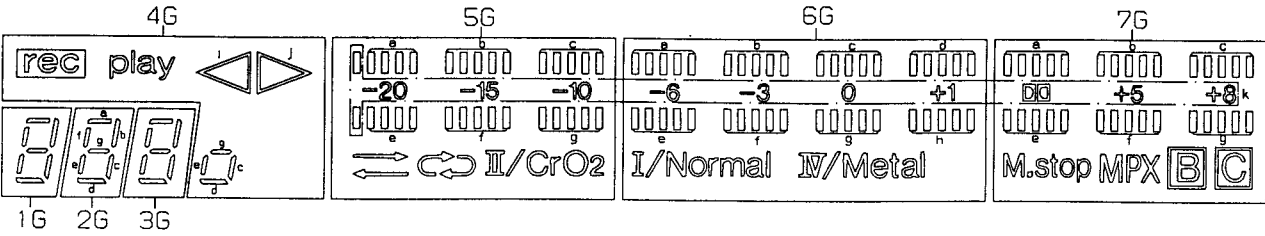
• IC901 (M50940-263SP): Microcomputer

Pin No.	Mark	I/O Division	Function
1	VREF	I	Reference Voltage terminal
2	1 WAY/REV	I	Mechanism select signal (Not used, connected to GND)
3	5.6/8.8	I	Remote control select (Not used, connected to GND)
4	LCH	I	Lch level display
5	RCH	I	Rch level display
6	KEY 2	I	Key SW input
7	KEY 1		
8	LTD	I	Reader tape det. signal
9	RPS	I	Rotation pulse det. signal
10	DMT	O	Line out mute signal ("H": ON, "L": OFF)
11	RMT	O	REC AMP mute signal ("H": ON "L": OFF)
12	BOS	O	BIAS OSC ON/OFF control ("H": ON "L": OFF)
13	REC	O	Rec mode signal ("H": Rec "L": other)
14	C	O	Dolby NR mode select signal ("L": Dolby C, "H": other)
15	B	O	Dolby NR mode select signal ("L": Dolby B, "H": other)
16	MPX	O	MPX ON/OFF control signal ("L": ON, "H": OFF)
17	C/R	O	Cue/rev mode control ("H": cue/rev, "L": other)
18	Remo	I	Remote control signal
19	ARM	I	Auto rec mute key signal ("L": key on, "H" key off)
20	SYNC	I	Synchro start signal ("L": start, "H": stop)
21	ATSC ATSM	I	Auto tape selector signal
22			Nor CrO ₂ Metal
22			ATSC L H H
22			ATSM L L H
23	WDT	O	Timer normal or abnormal select signal (Normal: "H", Abnormal: "L")

Pin No.	Mark	I/O Division	Function
24	POF	I	AC POWER off detect signal
25	REN	O	Rec enable signal ("L": rec, "H": other)
26	CN V _{SS}	—	GND terminal
27	RESET	I	Reset signal ("L": reset)
28	X IN	I	Clock OSC terminal (4MHz)
29	X OUT	O	
30	XC IN	I	(Not used, connected to GND)
31	XC OUT	O	(Not used, open)
32	VSS	—	GND terminal
33	φ	O	System clock signal (Not used, open)
34	RINH	I	Reverse rec inhibit
35	F INH	I	Forward rec inhibit
36	MODE	I	Mechanism mode SW terminal
37	HALF	I	Cassette half det. SW terminal
38	Vp	I	Reference voltage terminal (Negative voltage)
39	CSOL	O	Brake solenoid hold control signal
40	BSOL	O	Brake solenoid trigger control signal
41	TSOL	O	Trigger solenoid control signal
42	RMR RMF	O	Reel motor control
43			STOP PLAY • FF REW
43			RMR L L H
43			RMF L H L
44	CAPM	O	Capstan motor control ("H": ON, "L": OFF)
45	a	O	FL segment control signal
45	s		
45	k		
56	1G	O	FL grid control signal
62	7G		
63	AV _{CC}	—	Power supply terminal (Positive voltage)
64	V _{CC}	—	Power supply terminal (Positive voltage)

■ INTERNAL CONNECTION OF FL

• Grid connection diagram



• Anode connection table

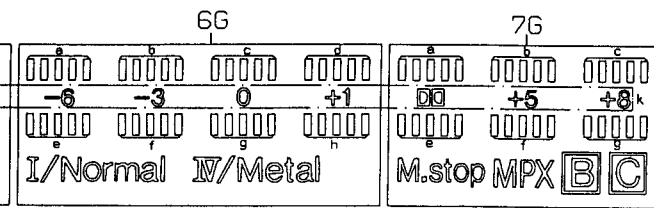
	1G	2G	3G	4G	5G	6G	7G
a	a	a	a	rec			
b	b	b	b	play			
c	c	c	c	c			
d	d	d	d	d	-		M.stop
e	e	e	e	e			
f	f	f	f	-			
g	g	g	g	g			
h	-	-	-	-	II/CrO ₂		MPX
i	-	-	-	◀	↔	I/Normal	B
j	-	-	-	▶	↻	IV/Metal	C
k	-	-	-	-	-20 -15 -10	-6 -3 0 +1	◻◻+5 +8

• Pin connection

PIN NO.	42	41	40	39	38	37	36	35	34	33	32	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1
CONNECTION	F 2	F 2	N P	N P	a	b	c	d	e	f	g	h	i	j	k	N C	N C	N C	N C	N C	N C	N C	N C	N C	N C	N C	N C	N C	N C	N C	N C	1 G	2 G	3 G	4 G	5 G	6 G	7 G	N P	N P	F 1	F 1

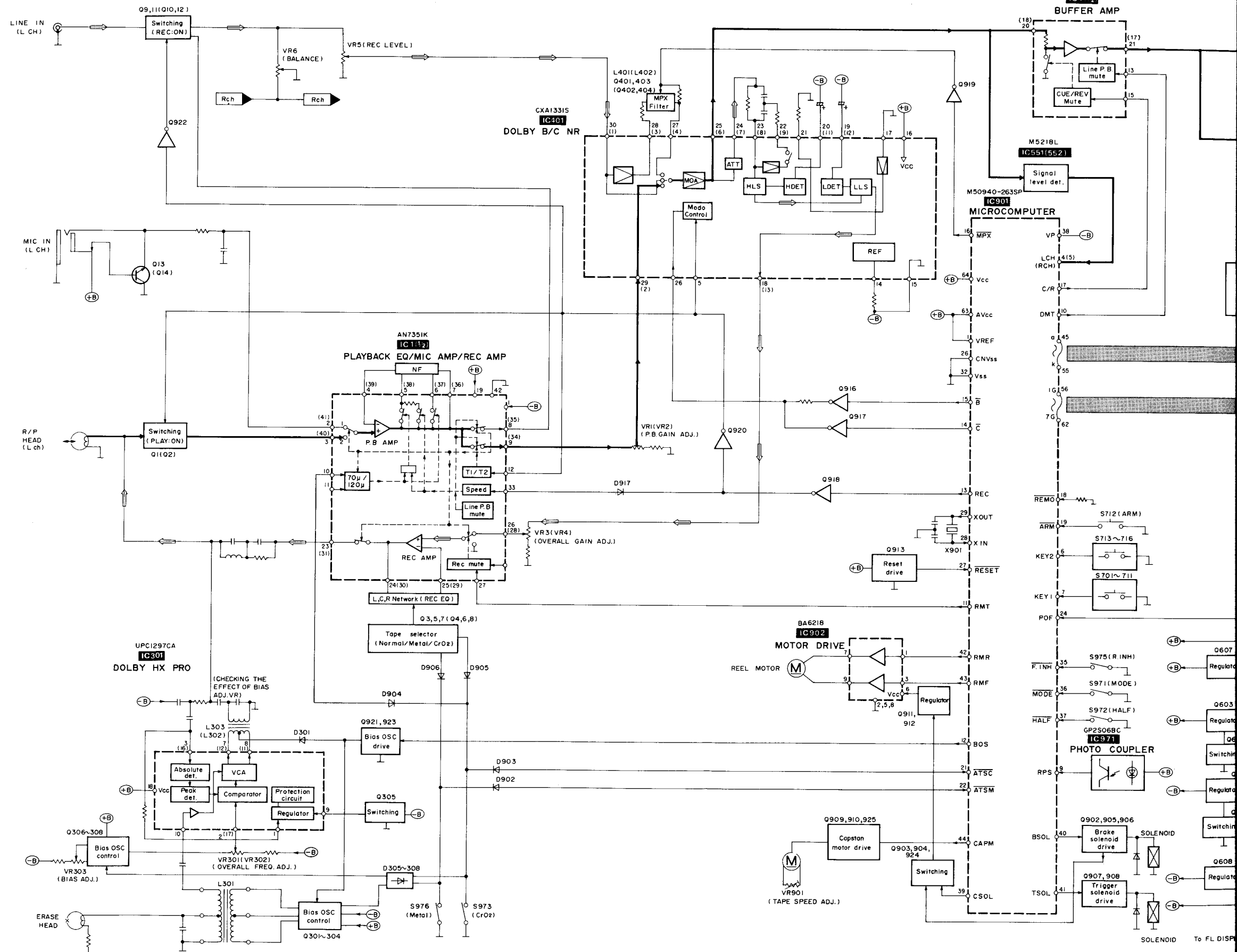
Note 1.)NP..... No pin.
2.)F1,F2..... Filament
3.)1G~7G..... Grid
4.)NC..... No connection

BLOCK DIAGRAM

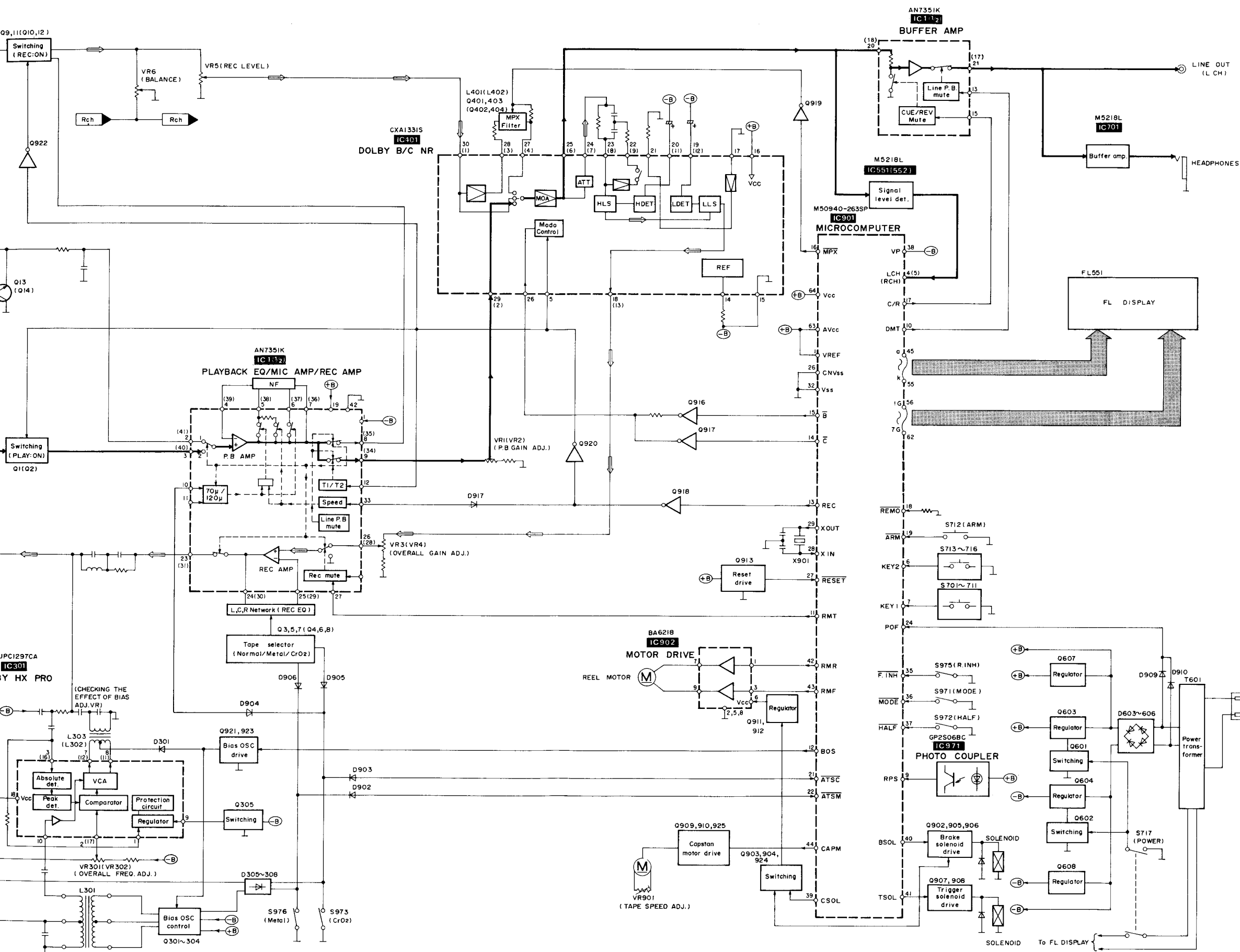


4G	5G	6G	7G
rec			
play			
c			
d			M.stop
e			
-			
g			
-	II/CrO2		MPX
△		I/Normal	B
△		IV/Metal	C
-	-20 -15 -10	-6 -30 +1	□□ +5 +8

25	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1
N	N	N	N	N	N	N	N	N	N	N	N	N	N	1	2	3	4	5	6	7	N	N	F	F
C	C	C	C	C	C	C	C	C	C	C	C	C	C	G	G	G	G	G	G	P	P	1	1	



AM



■ TERMINAL GUIDE OF IC'S, TRANSISTORS AND DIODES

		<table border="1"> <tr> <td>AN7351K</td> <td>42 Pin</td> </tr> <tr> <td>CXA1331S</td> <td>30 Pin</td> </tr> <tr> <td>M50940-263SP</td> <td>64 Pin</td> </tr> <tr> <td>UPC1297CA</td> <td>18 Pin</td> </tr> </table>	AN7351K	42 Pin	CXA1331S	30 Pin	M50940-263SP	64 Pin	UPC1297CA	18 Pin
AN7351K	42 Pin									
CXA1331S	30 Pin									
M50940-263SP	64 Pin									
UPC1297CA	18 Pin									
		<table border="1"> <tr> <td>M5218L</td> <td>8 Pin</td> </tr> <tr> <td>BA6218</td> <td>9 Pin</td> </tr> </table>	M5218L	8 Pin	BA6218	9 Pin				
M5218L	8 Pin									
BA6218	9 Pin									
<table border="1"> <tr> <td>2SB621ARSTA 2SD592AQRSTA</td> <td> <table border="1"> <tr> <td>2SJ164PQRTA 2SK381BCDTA</td> </tr> </table> </td> <td> <table border="1"> <tr> <td>2SA1309AQSTA 2SB1030RSTTA 2SC3311AQSTA 2SD1450RSTA</td> </tr> </table> </td> </tr> </table>	2SB621ARSTA 2SD592AQRSTA	<table border="1"> <tr> <td>2SJ164PQRTA 2SK381BCDTA</td> </tr> </table>	2SJ164PQRTA 2SK381BCDTA	<table border="1"> <tr> <td>2SA1309AQSTA 2SB1030RSTTA 2SC3311AQSTA 2SD1450RSTA</td> </tr> </table>	2SA1309AQSTA 2SB1030RSTTA 2SC3311AQSTA 2SD1450RSTA	<table border="1"> <tr> <td>DTC114ESTP DTC144ESTP</td> <td> </td> </tr> </table>		DTC114ESTP DTC144ESTP		
2SB621ARSTA 2SD592AQRSTA	<table border="1"> <tr> <td>2SJ164PQRTA 2SK381BCDTA</td> </tr> </table>	2SJ164PQRTA 2SK381BCDTA	<table border="1"> <tr> <td>2SA1309AQSTA 2SB1030RSTTA 2SC3311AQSTA 2SD1450RSTA</td> </tr> </table>	2SA1309AQSTA 2SB1030RSTTA 2SC3311AQSTA 2SD1450RSTA						
2SJ164PQRTA 2SK381BCDTA										
2SA1309AQSTA 2SB1030RSTTA 2SC3311AQSTA 2SD1450RSTA										
DTC114ESTP DTC144ESTP										
<table border="1"> <tr> <td>DTA114ESTP DTA144ESTP</td> <td> </td> </tr> </table>	DTA114ESTP DTA144ESTP		<table border="1"> <tr> <td>2SB1357EFTA 2SD2037EFTA</td> <td> </td> </tr> </table>		2SB1357EFTA 2SD2037EFTA					
DTA114ESTP DTA144ESTP										
2SB1357EFTA 2SD2037EFTA										
		<table border="1"> <tr> <td>MA4051MTA MA4056HTA MA4056MTA MA4062HTA</td> <td> <table border="1"> <tr> <td>MA4091MTA MA4120MTA MA4240MTA MA4330MTA</td> </tr> </table> </td> </tr> </table>	MA4051MTA MA4056HTA MA4056MTA MA4062HTA	<table border="1"> <tr> <td>MA4091MTA MA4120MTA MA4240MTA MA4330MTA</td> </tr> </table>	MA4091MTA MA4120MTA MA4240MTA MA4330MTA					
MA4051MTA MA4056HTA MA4056MTA MA4062HTA	<table border="1"> <tr> <td>MA4091MTA MA4120MTA MA4240MTA MA4330MTA</td> </tr> </table>	MA4091MTA MA4120MTA MA4240MTA MA4330MTA								
MA4091MTA MA4120MTA MA4240MTA MA4330MTA										
		<table border="1"> <tr> <td>1SR35200TB MA165TA MA167TA</td> </tr> </table>	1SR35200TB MA165TA MA167TA							
1SR35200TB MA165TA MA167TA										

1 2 3 4 5 6 7 8 9 10

A

B

C

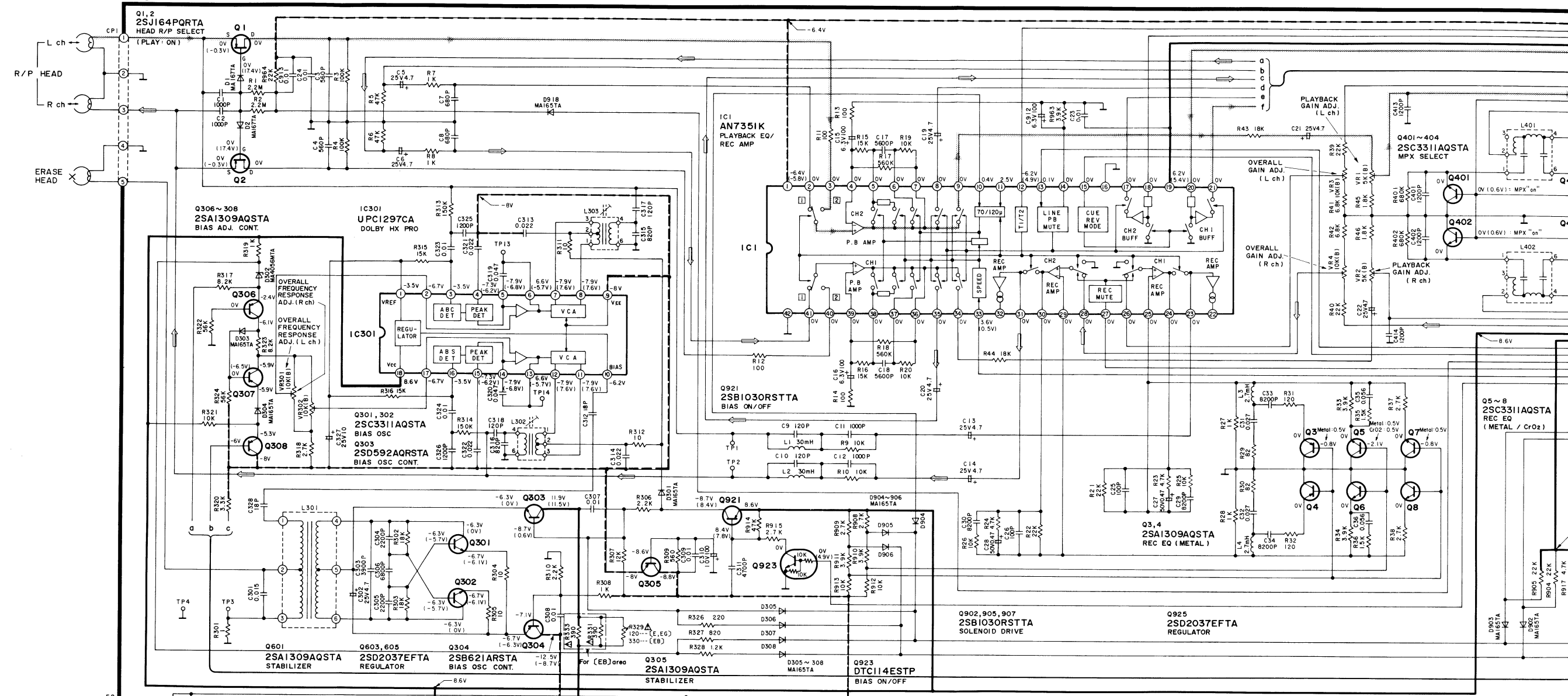
D

E

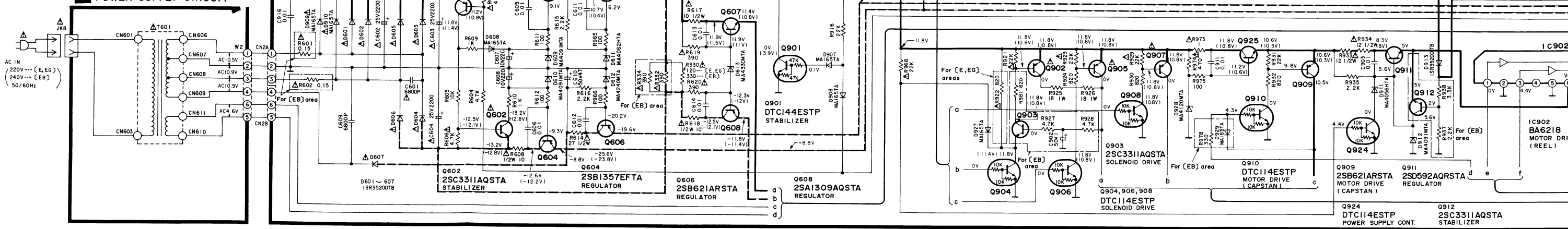
F

G

A MAIN CIRCUIT



B POWER SUPPLY CIRCUIT





■ SCHEMATIC DIAGRAM

(Parts list on pages 27, 28, 35, 36.)

(This schematic diagram may be modified at any time with development of new technology.)

Notes:

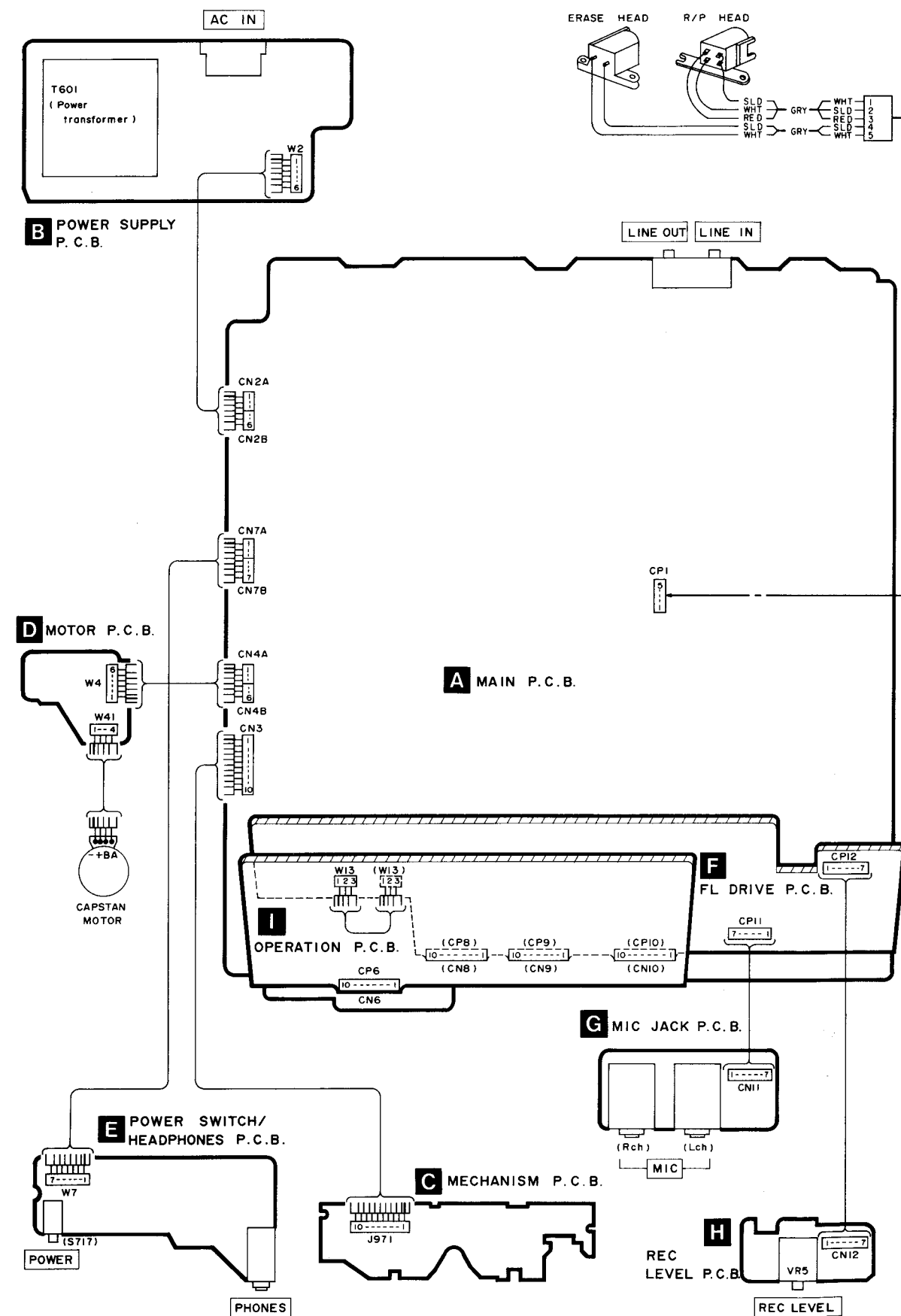
- **S701** : Stop switch (stop) in "off" position.
- **S702** : Fast-forward/cue switch (ff) in "off" position.
- **S703** : Rewind/review switch (rew) in "off" position.
- **S704** : Playback switch (play) in "off" position.
- **S706** : Record switch (rec) in "off" position.
- **S707** : Pause switch (pause) in "off" position.
- **S708, 709** : Dolby noise-reduction switches in "off" position.
[S708: Dolby NR C]
[S709: Dolby NR B]
- **S710** : Multiplex filter switch (MPX filter) in "off" position.
- **S711** : Timer switch (timer) in "off" position.
- **S712** : Automatic-record-muting switch (auto rec mute) in "off" position.
- **S713** : Counter reset switch (counter reset) in "off" position.
- **S714** : Memory-stop switch (memory stop) in "off" position.
- **S715, 716** : Peak hold reset switches.
[S715: auto]
[S716: manual]
- **S717** : Power switch (power) in "on" position.
- **S971** : Mode switch in "off" position.
- **S972** : Cassette half detection switch in "off" position.
- **S973** : ATS (CrO₂) switch in "off" position.
- **S975** : Rec inhibit switch in "off" position.
- **S976** : ATS (Metal) switch in "off" position.

- Resistance are in ohms (Ω), 1/4 watt unless specified otherwise.
1K=1,000 (Ω), 1M=1,000k (Ω)
- Capacity are in micro-farads (μ F) unless specified otherwise.
- All voltage values shown in circuitry are under no signal condition and playback mode with volume control at minimum position otherwise specified.
()Voltage values at record mode.
For measurement us EVM.
- Important safety notice
Components identified by Δ mark have special characteristics important for safety. When replacing any of these components, use only manufacturer's specified parts.
- (———) indicates +B (bias).
- (- - -) indicates -B (bias).
- (\Rightarrow) indicates the flow of the playback signal.
- (\Rightarrow) indicates the flow of the record signal.

* Caution!

- IC and LSI are sensitive to static electricity.
- Secondary trouble can be prevented by taking care during repair.
- * Cover the parts boxes made of plastics with aluminum foil.
- * Ground the soldering iron.
- * Put a conductive mat on the work table.
- * Do not touch the legs of IC or LSI with the fingers directly.

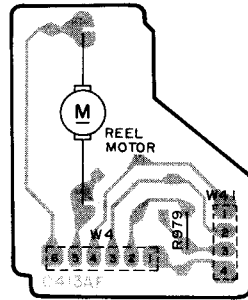
■ WIRING CONNECTION DIAGRAM



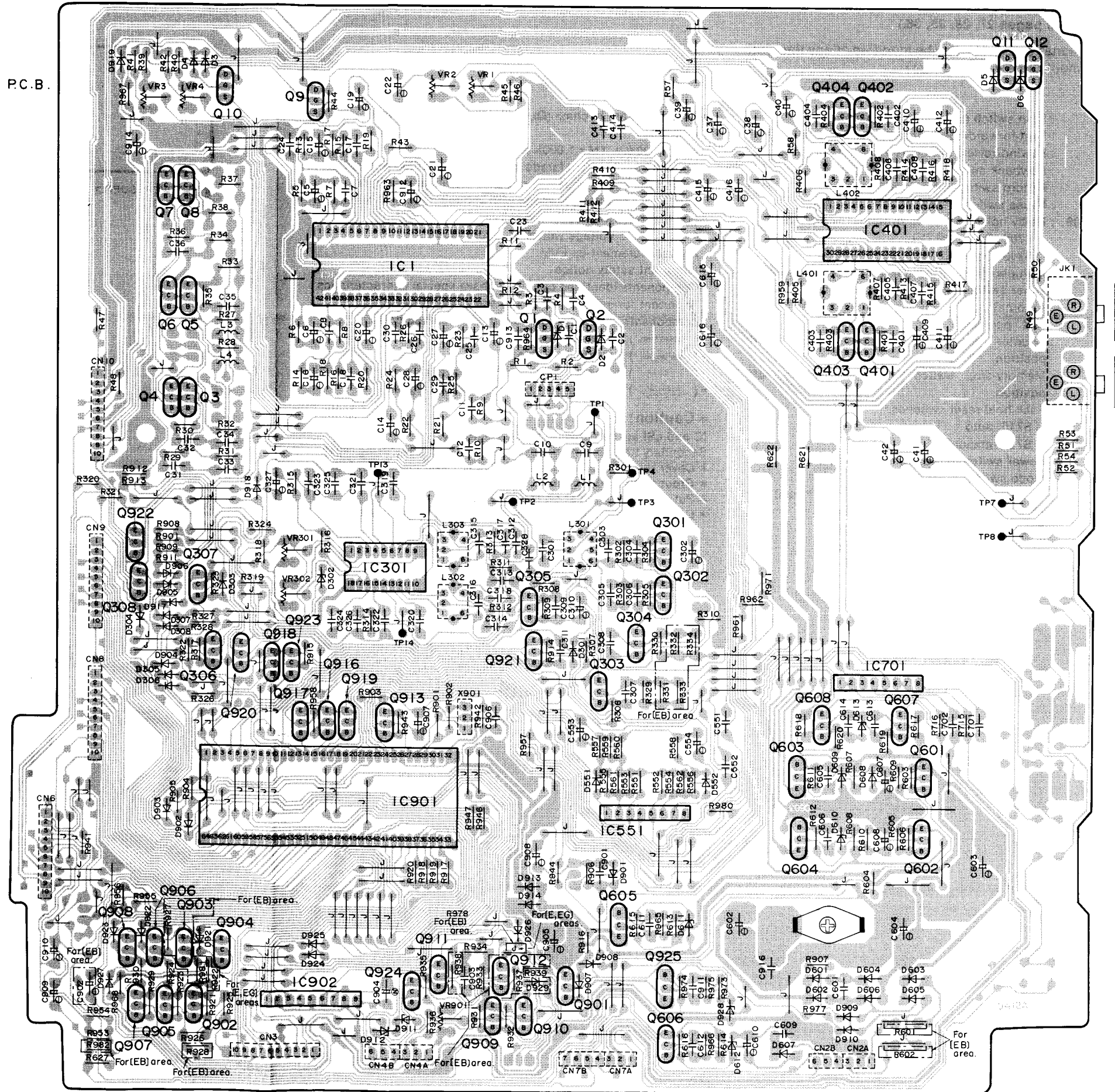
PRINTED CIRCUIT BOARDS

A
B
C
D
E
F
G

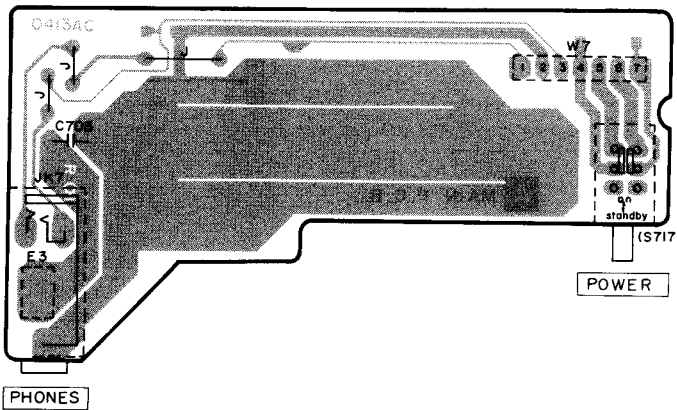
D MOTOR P.C.B.



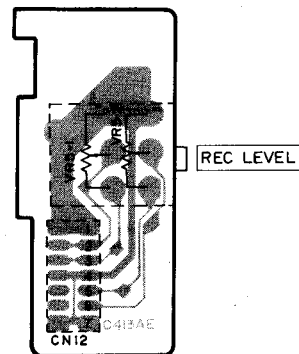
A MAIN P.C.B.



E POWER SWITCH/HEADPHONES P.C.B.



H REC LEVEL P.C.B.



11

12

13

14

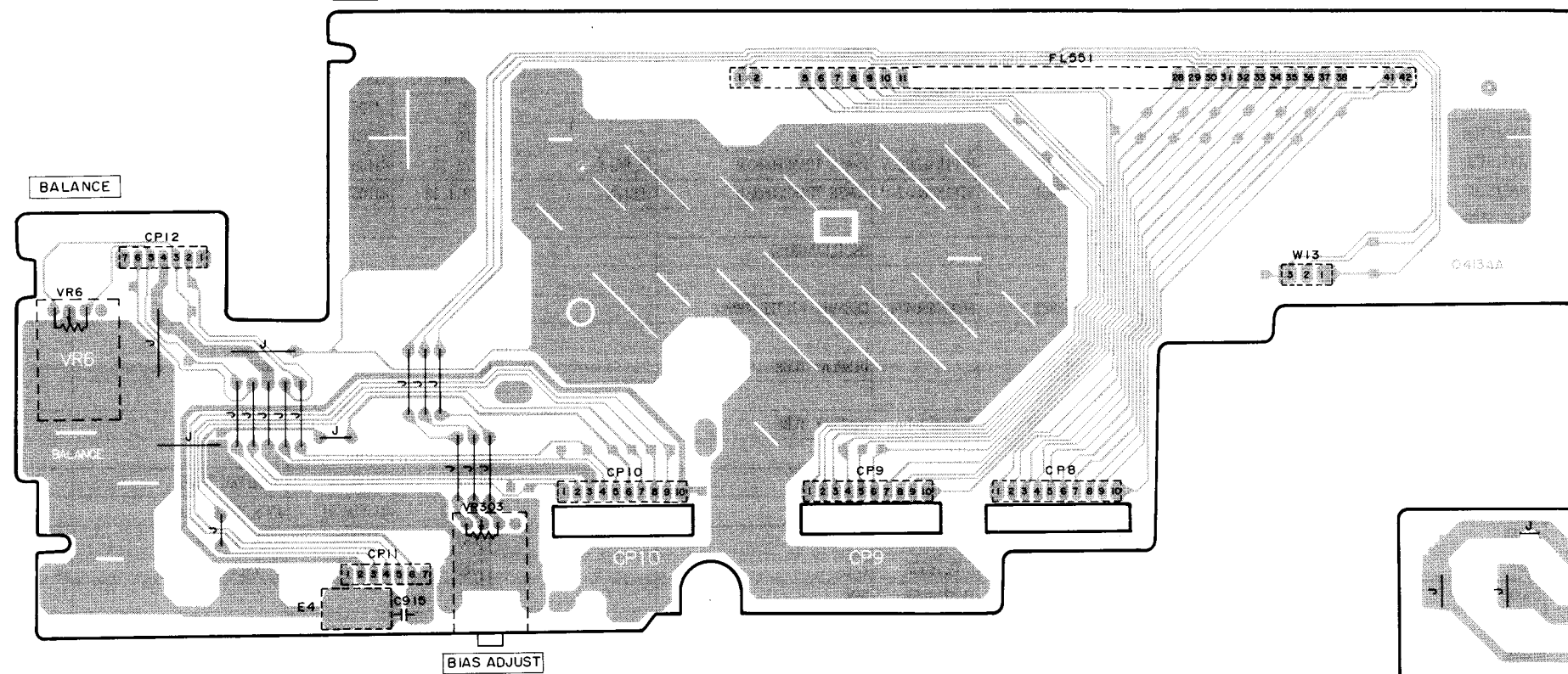
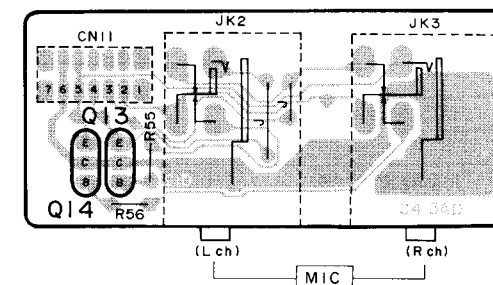
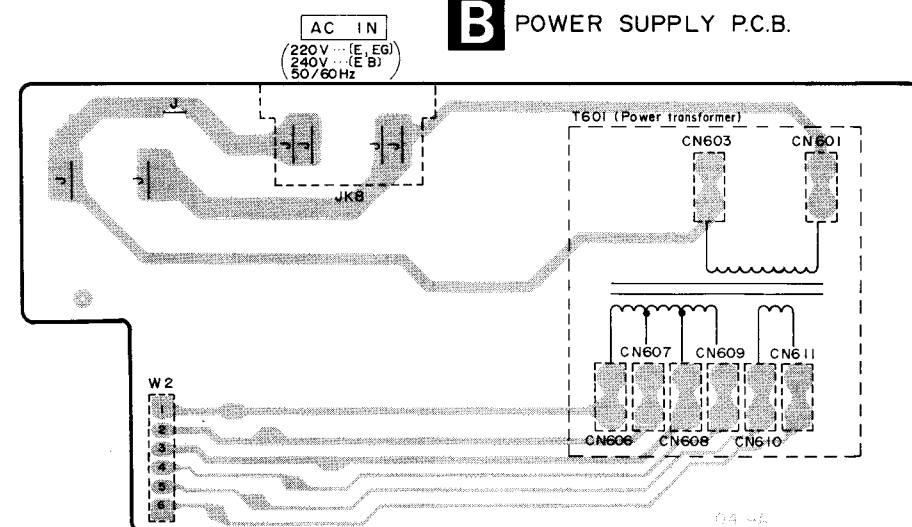
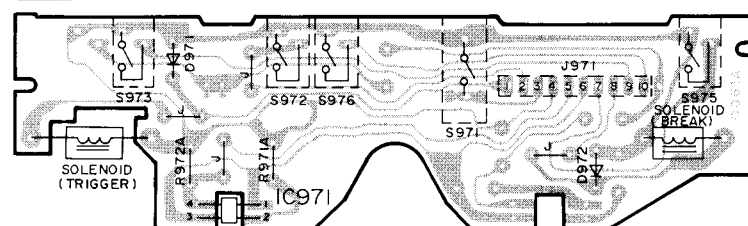
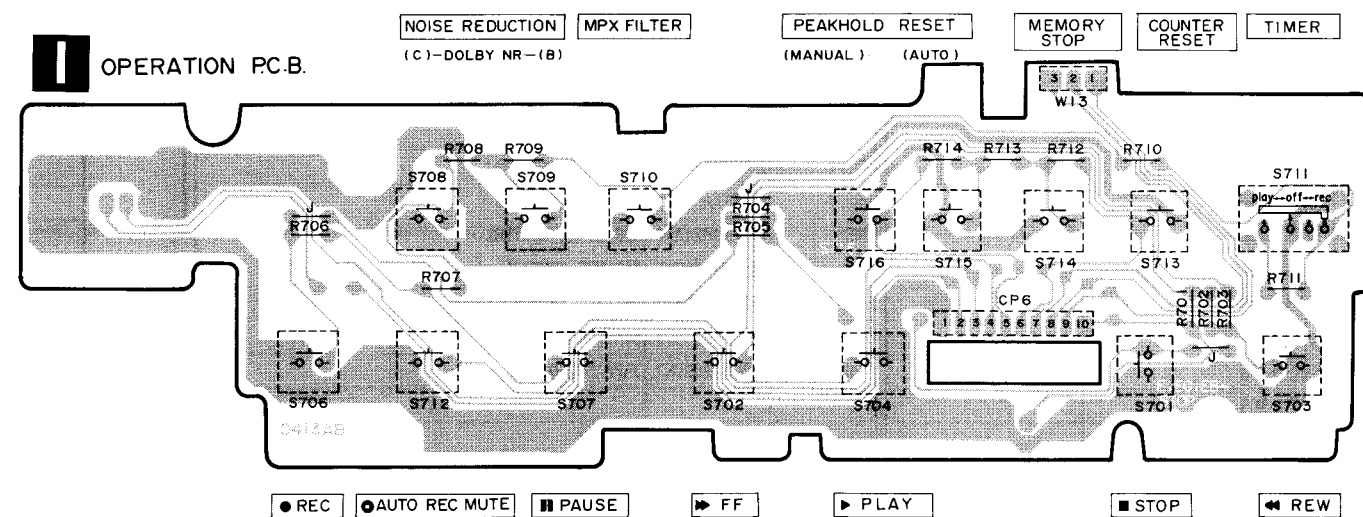
15

16

17

18

19

F FL DRIVE P.C.B.**G** MIC JACK P.C.B.**B** POWER SUPPLY P.C.B.**C** MECHANISM P.C.B.**I** OPERATION P.C.B.

REPLACEMENT PARTS LIST

Notes : * Important safety notice:
Components identified by Δ mark have special characteristics important for safety. When replacing any of these components use only manufacturer's specified parts.
* The parenthesized indications in the Remarks columns specify the areas. (Refer to the cover page for area.)
Parts without these indications can be used for all areas.

Ref. No.	Part No.	Part Name & Description	Remarks	Ref. No.	Part No.	Part Name & Description	Remarks
		INTEGRATED CIRCUIT(S)		Q918	DTC144ESTP	TRANSISTOR	
				Q919, 920	DTA114ESTP	TRANSISTOR	
				Q921	2SB1030RSTTA	TRANSISTOR	
				Q922	DTA144ESTP	TRANSISTOR	
				Q923, 924	DTC114ESTP	TRANSISTOR	
				Q925	2SD2037EFTA	TRANSISTOR	
						DIODE (S)	
				D1, 2	MA167TA	DIODE	
				D3-6	MA165TA	DIODE	
				D301	MA165TA	DIODE	
				D302	MA4056MTA	DIODE	
				D303-308	MA165TA	DIODE	
				D551, 552	MA165TA	DIODE	
				D601-607	1SR35200TB	DIODE	Δ
				D608	MA165TA	DIODE	
				D609, 610	MA4091MTA	DIODE	
				D611	MA4062HTA	DIODE	
				D612	MA4240MTA	DIODE	
				D613	MA4330MTA	DIODE	
				D901	MA4051MTA	DIODE	
				D902-908	MA165TA	DIODE	
				D909, 910	MA165TA	DIODE	Δ
				D911	MA4056HTA	DIODE	
				D912	MA4091MTA	DIODE	
				D913, 914	1SR35200TB	DIODE	
				D917-919	MA165TA	DIODE	
				D921-927	MA165TA	DIODE	
				D928	MA4120MTA	DIODE	
				D929	MA165TA	DIODE	(EB)
				D971, 972	1SS133	DIODE	
						VARIABLE RESISTOR (S)	
				VR1, 2	EVNDXAA00B53	PLAYBACK GAIN ADJ.	
				VR3, 4	EVNDXAA00B14	OVERALL GAIN ADJ.	
				VR5	EWGEP024A54	REC. LEVEL CONTROL	
				VR6	EVJ02SF06G15	BALANCE CONTROL	
				VR301, 302	EVNDXAA00B14	OVERALL FREQUENCY ADJ.	
				VR303	EVJ02VF04B53	BIAS CONTROL ADJ.	
				VR901	EVNDXAA00BS3	TAPE SPEED ADJ.	
						COIL (S)	
				L1, 2	SLQX303-1KT	COIL	
				L3, 4	SLQX272-1YT	COIL	
IC1	AN7351K	PLAYBACK/REC AMP					
IC301	UPC1297CA	DOLBY HX PRO					
IC401	CXA1331S	DOLBY B/C NR					
IC551	M5218L	LEVEL METER AMP					
IC701	M5218L	HEADPHONES AMP					
IC901	M50940-263SP	MICROCOMPUTER, MECHANICAL					
IC902	BA6218	REEL MOTOR CONTROL					
IC971	GP2S06BC	PHOTO COUPLER					
		TRANSISTOR (S)					
Q1, 2	2SJ164PQRTA	TRANSISTOR					
Q3, 4	2SA1309AQSTA	TRANSISTOR					
Q5-8	2SC3311AQSTA	TRANSISTOR					
Q9, 10	2SK381BCDTA	TRANSISTOR					
Q11, 12	2SJ164PQRTA	TRANSISTOR					
Q13, 14	2SD1450RSTA	TRANSISTOR					
Q301, 302	2SC3311AQSTA	TRANSISTOR					
Q303	2SD592AQRSTA	TRANSISTOR					
Q304	2SB621ARSTA	TRANSISTOR					
Q305-308	2SA1309AQSTA	TRANSISTOR					
Q401-404	2SC3311AQSTA	TRANSISTOR					
Q601	2SA1309AQSTA	TRANSISTOR	Δ				
Q602	2SC3311AQSTA	TRANSISTOR	Δ				
Q603	2SD2037EFTA	TRANSISTOR					
Q604	2SB1357EFTA	TRANSISTOR					
Q605	2SD2037EFTA	TRANSISTOR					
Q606	2SB621ARSTA	TRANSISTOR					
Q607	2SC3311AQSTA	TRANSISTOR					
Q608	2SA1309AQSTA	TRANSISTOR					
Q901	DTC144ESTP	TRANSISTOR					
Q902	2SB1030RSTTA	TRANSISTOR	Δ				
Q903	2SC3311AQSTA	TRANSISTOR	(EB)				
Q904	DTC114ESTP	TRANSISTOR					
Q905	2SB1030RSTTA	TRANSISTOR	Δ				
Q906	DTC114ESTP	TRANSISTOR					
Q907	2SB1030RSTTA	TRANSISTOR	Δ				
Q908	DTC114ESTP	TRANSISTOR					
Q909	2SB621ARSTA	TRANSISTOR					
Q910	DTC114ESTP	TRANSISTOR					
Q911	2SD592AQRSTA	TRANSISTOR					
Q912	2SC3311AQSTA	TRANSISTOR	(EB)				
Q913	2SC3311AQSTA	TRANSISTOR					
Q916, 917	DTA144ESTP	TRANSISTOR					

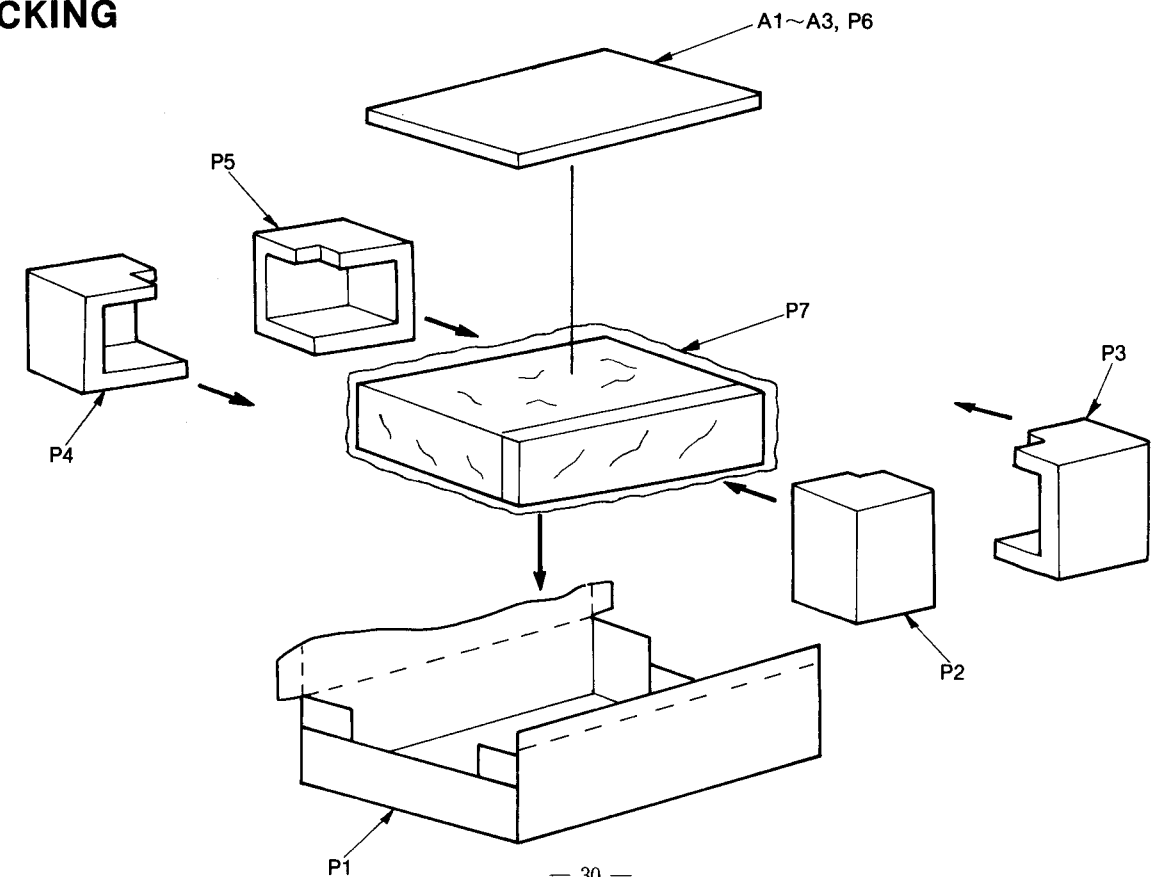
Ref. No.	Part No.	Part Name & Description	Remarks	Ref. No.	Part No.	Part Name & Description	Remarks
L301	SL09B4-K	COIL		CN11, 12	RJU057W007	SOCKET (7P)	
L302, 303	SL09B1-K	COIL		CN601	RJS1A1101	SOCKET (1P)	
L401, 402	QLM9Z10K	COIL		CN603	RJS1A1101	SOCKET (1P)	
				CN606-611	RJS1A1101	SOCKET (1P)	
		TRANSFORMER (S)		CP1	SJTD513	CONNECTOR (5P)	
				CP6	RJT003K010M1	CONNECTOR (10P)	
T601	RTP1K4E008-V	POWER TRANSFORMER	(E, EG) Δ	CP8-10	RJT003K010M1	CONNECTOR (10P)	
T601	RTP1K4B007-V	POWER TRANSFORMER	(EB) Δ	CP11, 12	RJT057W007	CONNECTOR (7P)	
		OSCILLATOR (S)				GND PART (S)	
X901	EF0GC4004T4	CERAMIC FILTER (4MHz)		E1, 2	SNE1004-1	GND PLATE	
				E3	SUSD165	GND SPRING	
		DISPLAY TUBE		E4	RMCO089	GND SPRING	
FL551	RSL0054-F	DISPLAY TUBE				JACK (S)	
		SWITCH (ES)		JK1	SJF3069N	TERMINAL BOARD	
				JK2, 3	RJ165MS01	JACK, MIC (L), (R)	
S701	EVQ21405R	STOP		JK7	SJJ146B	JACK, HEADPHONES	
S702	EVQ21405R	F. F.		JK8	SJS9236	AC INLET	Δ
S703	EVQ21405R	REW.					
S704	EVQ21405R	PLAYBACK					
S706	EVQ21405R	REC					
S707	EVQ21405R	PAUSE					
S708	EVQ21405R	DOLBY NR C					
S709	EVQ21405R	DOLBY NR B					
S710	EVQ21405R	MPX					
S711	SSS166	TIMER					
S712	EVQ21405R	AUTO REC MUTE					
S713	EVQ21405R	COUNTER RESET					
S714	EVQ21405R	MEMORY STOP					
S715	EVQ21405R	PEAK HOLD RESET (AUTO)					
S716	EVQ21405R	PEAK HOLD RESET (MANUAL)					
S717	SSH1230	POWER	Δ				
S971	RSH1A89Z	MODE					
S972	RSH1A90Z	HALF					
S973	RSH1A90Z	ATS					
S975	RSH1A90Z	REC INHIBIT					
S976	RSH1A90Z	ATS					
		CONNECTOR (S) AND SOCKET (S)					
CN2A	RJS1A1703	CONNECTOR (3P)					
CN2B	RJS1A1703	CONNECTOR (3P)					
CN3	SJSD1005	CONNECTOR (10P)					
CN4A	RJS1A1703	CONNECTOR (3P)					
CN4B	RJS1A1703	CONNECTOR (3P)					
CN6	RJU003K010M1	SOCKET (10P)					
CN7A	RJS1A1703	CONNECTOR (3P)					
CN7B	RJS1A1704	CONNECTOR (4P)					
CN8-10	RJU003K010M1	SOCKET (10P)					

Notes : * Important safety notice:
 Components identified by \triangle mark have special characteristics important for safety. When replacing any of these components use only manufacturer's specified parts.
 * The parenthesized indications in the Remarks columns specify the areas. (Refer to the cover page for area.)
 Parts without these indications can be used for all areas.

Ref. No.	Part No.	Part Name & Description	Remarks	Ref. No.	Part No.	Part Name & Description	Remarks
		CABINET AND CHASSIS					
1	RKMD036-K	CABINET		P2	RPND345A	PAD (A)	
2	RYF0088A	CASSETTE LID		P3	RPND345B	PAD (B)	
3	SNE2129-1	SCREW		P4	RPND345C	PAD (C)	
4	XTB3+8JFZ1	SCREW		P5	RPND345D	PAD (D)	
5	RMND080	FL. HOLDER		P6	SPSD152	PAD, ACCESSORIES	
6	RGRD024E-A	REAR PANEL	(E)	P7	SPP756	PROTECTION COVER	
6	RGRD024E-B	REAR PANEL	(EB)			ACCESSORIES	
6	RGRD024E-C	REAR PANEL	(EG)	A1	RQF0700	INSTRUCTION MANUAL	(E)
7	RGU0030	BUTTON, POWER		A1	RQF0701	INSTRUCTION MANUAL	(EB)
8	RGV0022	KNOB, TIMER		A1	RQF0702	INSTRUCTION MANUAL	(EG)
9	RGW0032	KNOB, BALANCE LEVEL		A1-1	RFKSSB465E-K	INSTRUCTION MANUAL	(E)
10	RGW0033	KNOB, REC LEVEL		A1-1	RQT0580-B	INSTRUCTION MANUAL	(EB)
11	RKA0009-1	FOOT		A1-1	RQT0581-D	INSTRUCTION MANUAL	(EG)
12	RFKNSB465EAK	FRONT GRILLE ASS'Y (1)		A1-2	RQAD013	WARRANTY CARD	
12-1	RKW0038	TRANSPARENT PLATE		A1-3	RQCB0169	SERVICENTER LIST	
13	RFKNSB465EBK	FRONT GRILLE ASS'Y (2)		A2	SFDAC05E03	POWER CORD	(E, EG) \triangle
14	RMCD040-1	BRACKET		A2	SJA193-1	POWER CORD	(EB) \triangle
15	RMCD056	SHIELD PLATE		A3	SJP2249-3	STEREO CONNECTION CABLE	
16	RMKD026-3	CHASSIS					
17	RMND022	ORNAMENT					
18	RFKGSB465E-K	FRONT PANEL ASS'Y					
19	RGND117B	ORNAMENT, BUTTON (A)					
20	RGND278A	ORNAMENT, BUTTON (B)					
21	RGU0130	BUTTON, EJECT					
22	RFKNSB465ECK	BUTTON ASS'Y, COUNTER					
23	RFKNSB465EDK	BUTTON ASS'Y, NR					
24	RGU0133A	BUTTON, OPERATION					
25	RKF0020A-3	CASSETTE HOLDER					
25-1	QBP2006A	SPRING, TAPE PRESSURE					
26	RME0034	SPRING					
27	RML0086	EJECT LEVER					
28	RMND153	DAMPER GEAR ASS'Y					
29	XTB3+10JFZ	SCREW					
30	SUD444-1	WASHER					
31	SHE187-2	HOLDER					
32	SNE4021-1	NUT					
33	XTB3+6G	SCREW					
34	XTB3+20JFZ	SCREW					
35	XTB3+8JFZ	SCREW					
36	XTB26+4FFZ	SCREW					
		PACKING MATERIAL					
P1	RPG0519	CARTON BOX					

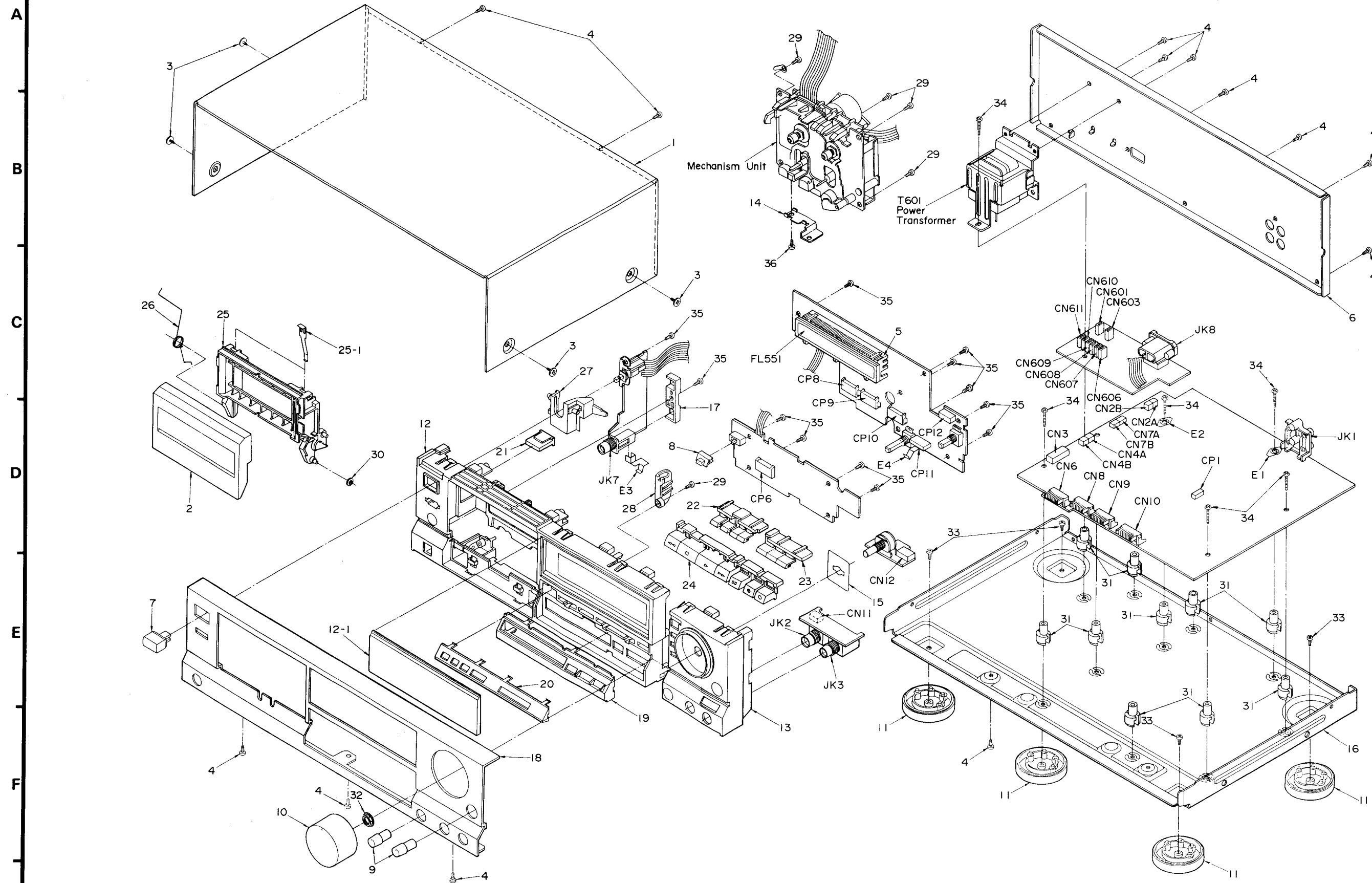
Ref. No.	Part No.	Part Name & Description	Remarks	Ref. No.	Part No.	Part Name & Description	Remarks
		MECHANISM PARTS LIST					
101	QH1361A	SCREW		124	XTN26+7J	SCREW	
102	SJH96-1	E HEAD		125	XTN26+26F	SCREW	
103	RHE52012A	SCREW		126	RMA0048	FLYWHEEL PLATE	
104	RJH4C35GZAM	R/P HEAD		127	RMD5014Z	ANGLE	
105	QBC1278A	SPRING		128	XSN26+3	SCREW	
106	RHM278ZA	SPACER		129	RHG3032Z	RUBBER CUSHION	
107	RMD50132C	HEAD SPACER		130	RHD26002	SCREW	
108	XTN2+5F	SCREW		131	RUB428Z	MOVING IRON CORE	
109	REX0227	LEAD WIRE BLOCK		132	RSJ0003	SOLENOID	
110	RXR0001	REEL TABLE		133	XTW2+8S	SCREW	
111	RJW139ZA	SPRING		134	RXQ0011	BRAKE SOLENOID	
112	RMA0047B	HEAD BASE		135	XTN26+4F	SCREW	
113	RXQ0078	MAIN ROD ASS'Y		136	RDG0030	MAIN GEAR	
114	RMM0012-2	EJECT ROD (L)		137	RXG0009	GEAR	
115	RME0018-1	SPRING		138	RXF0007	FLYWHEEL (F)	
116	RUB502Z	LEVER		139	RDV109ZA	CAPSTAN BELT	
117	RME0020	SPRING		140	RDG0034	REEL MOTOR GEAR	
118	RXL0007	BRAKE LEVER		141	RXG0003	REEL TABLE GEAR	
119	RJW142ZA	SPRING		142	RJQ112ZA	SPRING	
120	RXP0004	PINCH ROLLER ARM		143	RDG0033	REEL TABLE GEAR	
120-1	RJW140ZB	SPRING		144	RJQ111ZA	SPRING	
121	RFKRSB555E-K	CHASSIS ASS'Y		145	RML0037	LEVER	
122	MMN-6F4RA88	REEL MOTOR		146	RJW147ZA	SPRING	
123	RFM133ZA	DC MOTOR		147	RUS609Z	TAPE PRESSURE SPRING	
				148	RJS1077ZA	CONNECTOR (10P), J971	

PACKING



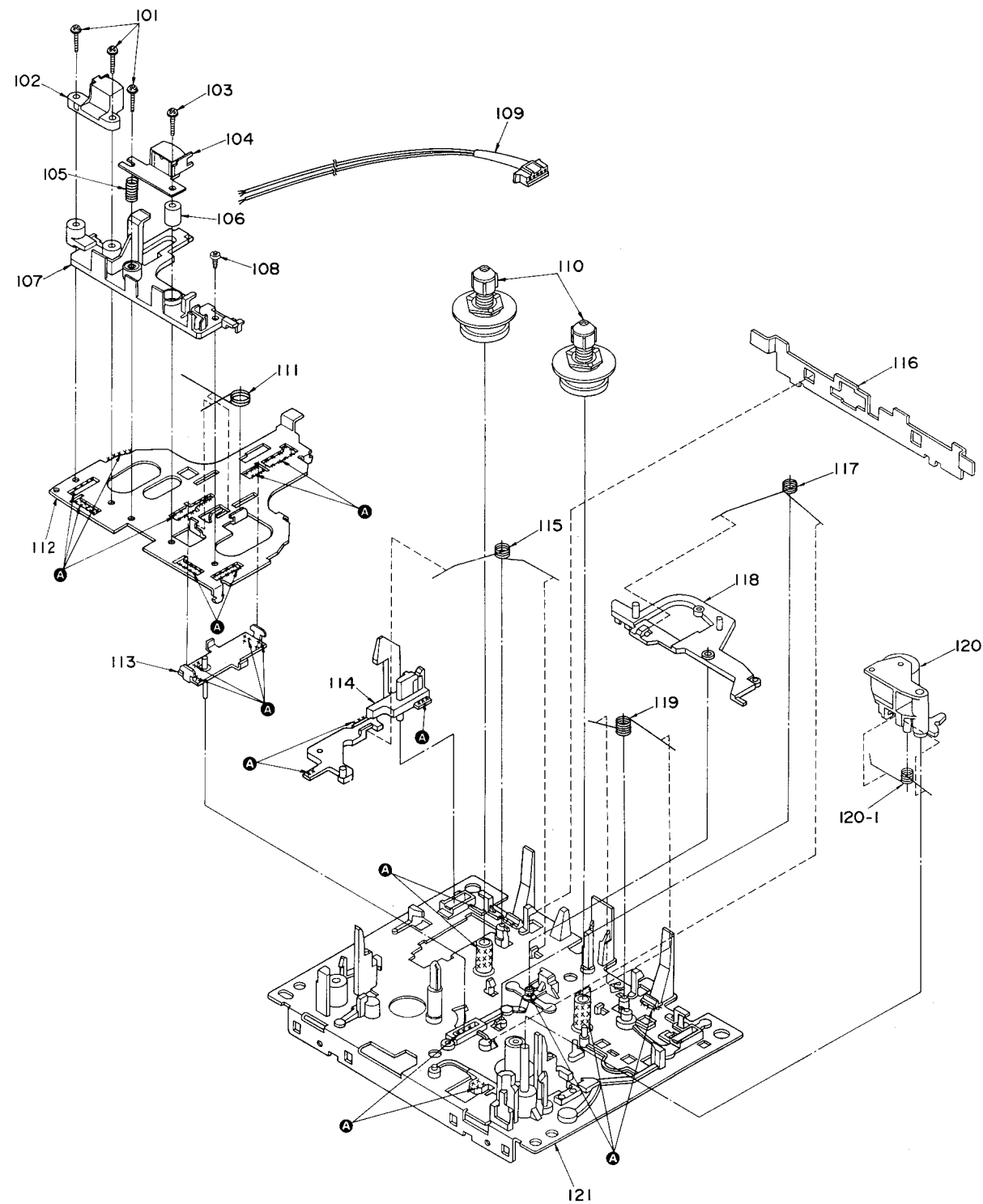
■ EXPLODED VIEWS

- **Cabinet parts**

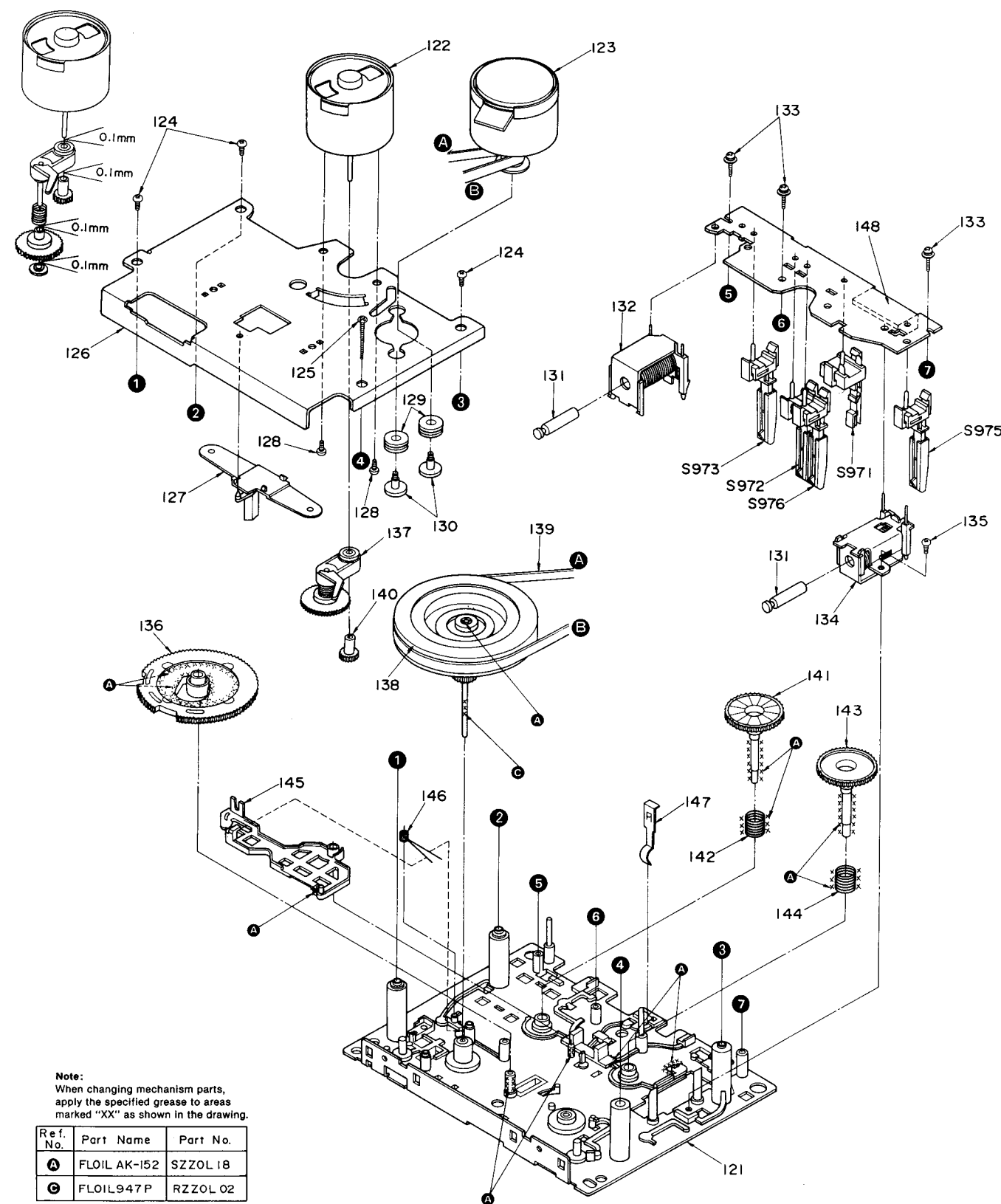




• Mechanical parts
(Top view)



(Bottom view)



Note:
When changing mechanism parts,
apply the specified grease to areas
marked "XX" as shown in the drawing.

Ref. No.	Part Name	Part No.
A	FLOIL AK-152	SZZOL 18
C	FLOIL 947P	RZZOL 02

■ RESISTORS & CAPACITORS

Notes : * Capacity value are in microfarads (uF) unless specified otherwise, P=Pico-farads (pF) F=Farads (F)
* Resistance values are in ohms, unless specified otherwise, 1K=1,000 (OHM) , 1M=1,000k (OHM)

Ref. No.	Part No.	Values & Remarks	Ref. No.	Part No.	Values & Remarks	Ref. No.	Part No.	Values & Remarks
		RESISTORS						
R1, 2	ERDS2TJ225T	1/4W 2.2M	R324	ERDS2TJ563T	1/4W 56K	R712	ERDS2TJ821T	1/4W 820
R3, 4	ERDS2TJ104T	1/4W 100K	R326	ERDS2TJ221T	1/4W 220	R713	ERDS2TJ102T	1/4W 1K
R5, 6	ERDS2TJ473T	1/4W 47K	R327	ERDS2TJ821T	1/4W 820	R714	ERDS2TJ122T	1/4W 1.2K
R7, 8	ERDS2TJ102T	1/4W 1K	R328	ERDS2TJ122T	1/4W 1.2K	R715, 716	ERDS2TJ101T	1/4W 100
R9, 10	ERDS2TJ103T	1/4W 10K	R329, 330	ERDS1FVJ121T	1/2W 120 (E, EG) △	R901	ERDS2TJ105T	1/4W 1M
R11-14	ERDS2TJ101T	1/4W 100	R329, 330	ERDS1FVJ331T	1/2W 330 (EB) △	R902	ERDS2TJ102T	1/4W 1K
R15, 16	ERDS2TJ153T	1/4W 15K	R331-334	ERDS1FVJ391T	1/2W 390 (EB) △	R903	ERDS2TJ331T	1/4W 330
R17, 18	ERDS2TJ564T	1/4W 560K	R401-404	ERDS2TJ684T	1/4W 680K	R904, 905	ERDS2TJ223T	1/4W 22K
R19, 20	ERDS2TJ103T	1/4W 10K	R405, 406	ERDS2TJ242T	1/4W 2.4K	R906	ERDS2TJ103T	1/4W 10K
R21, 22	ERDS2TJ223T	1/4W 22K	R407-410	ERDS2TJ562T	1/4W 5.6K	R907	ERDS2TJ472T	1/4W 4.7K △
R23, 24	ERDS2TJ472T	1/4W 4.7K	R411, 412	ERDS2TJ682T	1/4W 6.8K	R908, 909	ERDS2TJ272T	1/4W 2.7K
R25, 26	ERDS2TJ103T	1/4W 10K	R413, 414	ERDS2TJ243T	1/4W 24K	R910, 911	ERDS2TJ392T	1/4W 3.9K
R27, 28	ERDS2TJ102T	1/4W 1K	R415, 416	ERDS2TJ561T	1/4W 560	R912, 913	ERDS2TJ103T	1/4W 10K
R29, 30	ERDS2TJ820T	1/4W 82	R417	ERDS2TJ151T	1/4W 150	R914	ERDS2TJ473T	1/4W 47K
R31, 32	ERDS2TJ121T	1/4W 120	R418	ERDS2TJ273T	1/4W 27K	R915	ERDS2TJ272T	1/4W 2.7K
R33, 34	ERDS2TJ392T	1/4W 3.9K	R551, 552	ERDS2TJ104T	1/4W 100K	R916	ERDS2TJ223T	1/4W 22K
R35, 36	ERDS2TJ152T	1/4W 1.5K	R553, 554	ERDS2TJ473T	1/4W 47K	R917-920	ERDS2TJ472T	1/4W 4.7K
R37, 38	ERDS2TJ272T	1/4W 2.7K	R555, 556	ERDS2TJ124T	1/4W 120K	R921	ERDS2TJ223T	1/4W 22K △
R39, 40	ERDS2TJ223T	1/4W 22K	R557, 558	ERDS2TJ220T	1/4W 22	R922	ERDS2TJ821T	1/4W 820 (E, EG) △
R41, 42	ERDS2TJ682T	1/4W 6.8K	R559, 560	ERDS2TJ152T	1/4W 1.5K	R923	ERDS2TJ223T	1/4W 22K △
R43, 44	ERDS2TJ183T	1/4W 18K	R561, 562	ERDS2TJ684T	1/4W 680K	R924	ERDS2TJ821T	1/4W 820
R45, 46	ERDS2TJ182T	1/4W 1.8K	R601, 602	ERQ16NWR15E	1/6W 0.15 (EB) △	R925, 926	ERG1SJ180E	1W 18
R47, 48	ERDS2TJ102T	1/4W 1K	R603	ERDS2TJ472T	1/4W 4.7K △	R927, 928	ERDS2TJ472T	1/4W 4.7K (EB)
R49, 50	ERDS2TJ223T	1/4W 22K	R604	ERDS2TJ472T	1/4W 4.7K	R929	ERDS2TJ223T	1/4W 22K △
R51, 52	ERDS2TJ332T	1/4W 3.3K	R605	ERDS2TJ103T	1/4W 10K	R930	ERDS2TJ821T	1/4W 820
R53, 54	ERDS2TJ561T	1/4W 560	R606	ERDS2TJ472T	1/4W 4.7K △	R931	ERDS2TJ223T	1/4W 22K
R55, 56	ERDS2TJ223T	1/4W 22K	R607, 608	ERDS1FVJ100T	1/2W 10 (E, EG) △	R932	ERDS2TJ821T	1/4W 820
R57, 58	ERDS2TJ472T	1/4W 4.7K	R607, 608	ERD2FCVG100T	1/4W 10 (EB) △	R933, 934	ERDS1FVJ120T	1/2W 12 △
R301	ERDS2TJ180T	1/4W 1.0	R609, 610	ERDS2TJ102T	1/4W 1K	R935	ERDS2TJ222T	1/4W 2.2K
R302, 303	ERDS2TJ183T	1/4W 18K	R611, 612	ERDS2TJ101T	1/4W 100	R936	ERDS2TJ103T	1/4W 10K
R304, 305	ERDS2TJ100T	1/4W 10	R613, 614	ERDS1FVJ270T	1/2W 27 (E, EG) △	R937	ERDS2TJ222T	1/4W 2.2K (EB)
R306	ERDS2TJ222T	1/4W 2.2K	R613, 614	ERD2FCVG270T	1/4W 27 (EB) △	R938	ERDS2TJ332T	1/4W 3.3K (EB)
R307	ERDS2TJ123T	1/4W 12K	R615, 616	ERDS2TJ222T	1/4W 2.2K	R939	ERDS2TJ103T	1/4W 10K
R308	ERDS2TJ102T	1/4W 1K	R617, 618	ERDS1FVJ100T	1/2W 10 (E, EG) △	R941	ERDS2TJ152T	1/4W 1.5K
R309	ERDS2TJ561T	1/4W 560	R617, 618	ERD2FCVG100T	1/4W 10 (EB) △	R942, 943	ERDS2TJ103T	1/4W 10K
R310	ERDS2TJ222T	1/4W 2.2K	R619, 620	ERDS2TJ391T	1/4W 390 △	R944	ERDS2TJ471T	1/4W 470
R311, 312	ERDS2TJ100T	1/4W 10	R621, 622	ERDS2TJ101T	1/4W 100	R945, 947	ERDS2TJ103T	1/4W 10K
R313, 314	ERDS2TJ154T	1/4W 150K	R627	ERDS1FVJ180T	1/2W 18 △	R953	ERDS2TJ152T	1/4W 1.5K (EB)
R315, 316	ERDS2TJ153T	1/4W 15K	R701	ERDS2TJ821T	1/4W 820	R953	ERDS2TJ821T	1/4W 820 (E, EG)
R317	ERDS2TJ822T	1/4W 8.2K	R702	ERDS2TJ102T	1/4W 1K	R954	ERDS2TJ472T	1/4W 4.7K
R318	ERDS2TJ272T	1/4W 2.7K	R703	ERDS2TJ122T	1/4W 1.2K	R955, 956	ERDS2TJ223T	1/4W 22K
R319	ERDS2TJ102T	1/4W 1K	R704	ERDS2TJ152T	1/4W 1.5K	R957	ERDS2TJ273T	1/4W 27K
R320	ERDS2TJ332T	1/4W 3.3K	R705	ERDS2TJ182T	1/4W 1.8K	R958	ERDS2TJ822T	1/4W 8.2K
R321	ERDS2TJ103T	1/4W 10K	R706	ERDS2TJ222T	1/4W 2.2K	R959	ERDS2TJ103T	1/4W 10K
R322	ERDS2TJ563T	1/4W 56K	R707	ERDS2TJ332T	1/4W 3.3K	R961	ERDS2TJ122T	1/4W 1.2K
R323	ERDS2TJ822T	1/4W 8.2K	R708	ERDS2TJ472T	1/4W 4.7K	R962	ERDS2TJ472T	1/4W 4.7K
			R709	ERDS2TJ682T	1/4W 6.8K	R963	ERDS2TJ392T	1/4W 3.9K
			R710	ERDS2TJ123T	1/4W 12K	R964	ERDS2TJ223T	1/4W 22K
			R711	ERDS2TJ223T	1/4W 22K	R965, 966	ERDS2TJ101T	1/4W 100

Ref. No.	Part No.	Values & Remarks	Ref. No.	Part No.	Values & Remarks			
R967	ERDS2TJ104T	1/4W 100K	C325, 326	ECKR1H122KB5	50V 1200P			
R968	ERDS2TJ223T	1/4W 22K △	C327	ECEA1EK100B	25V 10U			
R971	ERDS2TJ472T	1/4W 4.7K	C328	ECBT1H180J5	50V 18P			
R971A	ERDS2TJ271T	1/4W 270	C401, 402	ECKR1H122KB5	50V 1200P			
R972A	ERDS2TJ183T	1/4W 18K	C403, 404	ECKR1H152KB5	50V 1500P			
R973	ERDS2TJ180T	1/4W 1.0 △	C405-408	ECQB1H222JZ3	50V 2200P			
R974	ERDS2TJ471T	1/4W 470 △	C409, 410	ECEA1HUR56B	50V 0.56U			
R975	ERDS2TJ101T	1/4W 100	C411, 412	ECEA1HRR33B	50V 0.33U			
R977	ERDS2TJ472T	1/4W 4.7K △	C413, 414	ECKR1H122KB5	50V 1200P			
R978	ERDS2TJ331T	1/4W 330 (EB)	C415, 416	ECEA1EK47B	25V 4.7U			
R979	ERDS2TJ432T	1/4W 4.3K	C551, 552	ECQV1H104JZ3	50V 0.1U			
R980	ERDS2TJ472T	1/4W 4.7K	C553, 554	ECEA0JU470B	6.3V 47U			
R981	ERDS2TJ821T	1/4W 820 (EB)	C601	ECKR2H682PE	500V 6800P △			
R982	ERDS2TJ182T	1/4W 1.8K (EB)	C602-604	ECEA1EU222E	25V 2200U △			
		CAPACITORS	C605, 606	ECKR1H103ZF5	50V 0.01U			
			C607, 608	ECEA1AU221B	10V 220U			
			C609	ECKR2H682PE	500V 6800P			
C1, 2	ECBT1H102KB5	50V 1000P	C610	ECEA1HU470B	50V 47U			
C3, 4	ECBT1H561KB5	50V 560P	C611-614	ECKR1H103ZF5	50V 0.01U			
C5, 6	ECEA1EK47B	25V 4.7U	C615, 616	ECEA1AU102B	10V 1000U			
C7, 8	ECBT1H681KB5	50V 680P	C701, 702	ECKR1H103ZF5	50V 0.01U			
C9, 10	ECKR2H121KB5	500V 120P	C703	ECBT1C103MS5	16V 0.01U			
C11, 12	ECBT1H102KB5	50V 1000P	C901	ECKR1H103ZF5	50V 0.01U			
C13, 14	ECEA1EK47B	25V 4.7U	C902	ECEA1HK010B	50V 1U (EB)			
C15, 16	ECEA0JU101B	6.3V 100U	C903	ECKR1H103ZF5	50V 0.01U			
C17, 18	ECQB1H562JZ3	50V 5600P	C904	ECEA1CN100SB	16V 10U			
C19-22	ECEA1EK47B	25V 4.7U	C905	ECEA0JU222B	6.3V 2200U			
C23, 24	ECKR1H103ZF5	50V 0.01U	C906	ECKR1H103ZF5	50V 0.01U			
C25, 26	ECBT1H101KB5	50V 100P	C907	ECEA1HK010B	50V 1U			
C27, 28	ECEA1HRR47B	50V 0.47U	C908	ECEA1EK47B	25V 4.7U			
C29, 30	ECQB1H822JZ3	50V 8200P	C909	ECEA1VK100B	35V 10U			
C31, 32	ECQV1H273JZ3	50V 0.027U	C910	ECEA1HK2R2B	50V 2.2U			
C33, 34	ECQB1H822JZ3	50V 8200P	C911	ECKR1H103ZF5	50V 0.01U			
C35, 36	ECQV1H563JZ3	50V 0.056U	C912	ECEA0JU101B	6.3V 100U			
C37, 38	ECEA1EK47B	25V 4.7U	C913	ECKR1H103ZF5	50V 0.01U			
C39, 40	ECEA1HK010B	50V 1U	C914	ECEA1HK010B	50V 1U			
C41, 42	ECEA1CK100B	16V 10U	C915	ECBT1C103MS5	16V 0.01U			
C301	ECQP1153JZ3	100V 0.015U	C916	ECKR1H103ZF5	50V 0.01U			
C302	ECEA1EK47B	25V 4.7U						
C303	ECKR1H392KB5	50V 3900P						
C304, 305	ECKR1H222KB5	50V 2200P						
C306	ECKR1H682KB5	50V 6800P						
C307-309	ECKR1H103ZF5	50V 0.01U						
C310	ECEA1AU101B	10V 100U						
C311	ECKR1H472KB5	50V 4700P						
C312	ECBT1H180J5	50V 18P						
C313, 314	ECKR1H223ZF5	50V 0.022U						
C315, 316	ECBT1H821KB5	50V 820P						
C317, 318	ECBT1H121KB5	50V 120P						
C319, 320	ECQV1H473JZ3	50V 0.047U						
C321, 322	ECQB1H223JZ3	50V 0.022U						
C323, 324	ECQB1H103JZ3	50V 0.01U						

Cassette Deck

RS-B465

DEUTSCH

MESSUNGEN UND EINSTELL METHODEN

Meßinstrumente

- Elektronisches Voltmeter (EVM)
- Oszilloskop
- Digitaler Frequenzmesser
- Audiofrequenz-Oszillator

- Dämpfungswiderstand
- Gleichstrom-Voltmeter
- Widerstand (600Ω)

Tonkopf-Azimuteinstellung

1. Spielen Sie auf dem Testband (QZZCFM) den Teil für die Azimuteinstellung (8kHz, -20dB) ab. Drehen Sie die Azimuteinstellschraube so lange, bis die Abgaben des L-K und R-K den Höchstwert erreichen, und die Lissajoscge wellenfigur sich, wie abgebildet, 0 Grad nähert.

Anmerkung:

When L-K und R-K nicht auf demselben Punkt ihren Höchstwert erreichen, stellen Sie beide Kanäle auf den jeweiligen Höchstwert und gleichen dann aus.

2. Nehmen Sie denselben Einstellvorgang in der Wiedergabestellung vor.
3. Nach der Einstellung Schrauben-Sicherungsmittel an die Azimuth-Einstellschraube geben.

Einstellung der Gesamtverstärkungsregelung

1. Legen Sie das normale Leertestband (QZZCRA) ein und stellen das Gerät auf Aufnahme-/Betrieb.
2. Legen Sie ein Bezugseingabesignal (1kHz, -24dB) an. Stellen Sie das Ausgangssingal auf einen Pegel von 0V ein.
3. Nehmen Sie das Eingabesignal auf.
4. Geben Sie das in Schritt 3 oben aufgenommene Signal wieder und achten Sie darauf, daß das Ausgangssignal mit dem Normwert übereinstimmt.
5. Sollte der Wert nicht innerhalb der Norm liegen, justieren Sie VR3 (L-K) und VR4 (R-K).
6. Wiederholen Sie die Schritte 2~5 von oben so lange, bis das Ausgangssignal im Normbereich liegt.

Bandgeschwindigkeitseinstellung

1. Spielen Sie den Mittelteil des Testbands (QZZCWAT) ab.
2. Stellen Sie den VR901 so ein, daß die Abgabe den Normwert erfüllt.

Einstellung der Wiedergabeverstärkungsregelung

1. Spielen Sie auf dem Testband (QZZCFM) den Teil für die Einstellung der Verstärkungsregelung (315Hz, 0dB) ab.
2. Stellen Sie VR1 (L-K) und VR2 (R-K) so ein, daß die Abgabe den Normwert erfüllt.

Wiedergabefrequenzaang

1. Spielen Sie auf dem Testband (QZZCFM) den Teil für den Frequenzgang (315Hz, 12.5kHz~63Hz, -20dB) ab.
2. Achten Sie darauf, daß der Frequenzgang für beide Kanäle (L-K, R-K) in dem in Abb. 6 gezeigten Bereich liegt.

Gesamtfrequenzgang

1. Legen Sie das normale Leertestband (QZZCRA) ein und stellen das Gerät auf Aufnahme-/Pause-Betrieb.
2. Geben Sie über einen Lautstärkeregler ein Bezugseingabesignal (1kHz, -24dB) ein.
3. Stellen Sie das Signal auf 20dB und justieren die Frequenz von 50Hz~10.0kHz.
4. Nehmen Sie das Wobbelsignal auf.
5. Geben Sie das aufgenommene Signal wieder und achten darauf, daß dieses sich im Vergleich zur Bezugsfrequenz (1kHz) in dem in Abb. 8 aufgezeichneten Bereich befindet.
6. Sollte das Signal nicht im Normbereich liegen, justieren Sie VR301 (L-K) und VR302 (R-K) so, daß der Frequenzpegel mit der Norm übereinstimmt.
7. Wiederholen Sie die Schritte 2~6 und verwenden das CrO₂ Band (QZZCRX) und das Metallband (QZZCRZ). Der Frequenzbereich wird auf 12.5kHz (50Hz~12.5kHz) angehoben.
8. Achten Sie darauf, daß sich der Frequenzpegel in dem in Abb. 9 aufgezeigten Bereich befindet.

FRANÇAIS

METHODES DES MEASURES ET REGLAGES

Appareils de mesurage

- Voltmètre électronique
- Oscilloscope
- Compteur de fréquence numérique
- Oscillateur de fréquence audio

- A.T.T. (Atténuateur)
- Voltmètre à C.C.
- Résistance (600Ω)

Reglage Azimutal de la tete

1. Faire jouer la portion du réglage de l'azimut (8kHz, -20dB) de la bande d'essai (QZZCFM). Ajuster la vis de la mise au point azimutale jusqu'à ce que les sorties du canal de gauche et du canal de droite soient maximisées et que la forme d'onde de Lissajous, comme il est illustré, approche de 0 degré.

Nota:

Si le canal de gauche et canal de droite ne sont pas maximisés au même point, régler le point où les niveaux de chaque canal sont maximisés et égaux.

2. Effectuer le même réglage sur le mode d'audition.
3. Après cela, mettre une goutte de vernis de blocage sur la vis de réglage de l'azimut.

Reglage de L'amplification Totale

1. Introduire la bande d'essai vierge normale (QZZCRA) et régler l'appareil sur le mode d'intermission d'un disque.
2. Appliquer un signal d'entrée de référence (1kHz, -24dB). Diminuer la sortie de telle sorte que son niveau devienne de 0V.
3. Enregistrer ce signal d'entrée.
4. Faire jouer le signal enregistré à l'étape 3 ci-dessus, et s'assurer que la sortie en deçà de la valeur standard.
5. Si elle n'est pas en deçà de la valeur standard, régler VR3 (canal de gauche) et VR4 (canal de droite).
6. Répéter les étapes 2~5 ci-dessus jusqu'à ce que la sortie soit en deçà de la valeur standard.

Reglage de la Vitesse de Defilement

1. Faire jouer la portion médiane de la bande d'essai (QZZCWAT).
2. Régler VR901 de telle sorte que la sortie soit en deçà de la valeur standard.

Reglage de L'amplification de Lecture

1. Faire jouer la partie réglée de l'amplification (315Hz, 0dB) de la bande d'essai (QZZCFM).
2. Régler VR1 (canal de gauche) et VR2 (canal de droite) de telle sorte que la sortie soit en deçà de la valeur standard.

Reponse en Frequence de la Lecture

1. Faire jouer la partie de la réponse en fréquence (315Hz, 12.5kHz, -20dB) de la bande d'essai (QZZCFM).
2. S'assurer que la réponse en fréquence soit en deçà de la plage montrée dans la Fig. 6, à la fois pour le canal de gauche et le canal de droite.

Reponse en Frequence Totale

1. Introduire la bande d'essai vierge normale (QZZCRA) et régler l'appareil sur le mode d'intermission d'un disque.
2. Appliquer un signal d'entrée de référence (1kHz, -24dB) par l'intermédiaire d'un atténuateur.
3. Diminuer le signal de 20dB et régler la fréquence de 50Hz~10.0kHz.
4. Enregistrer le balayage de fréquence.
5. Faire jouer le signal enregistré et s'assurer qu'il soit en deçà de la plage montrée à la Fig. 8 en comparaison à la fréquence de référence (1kHz).
6. S'il n'est pas en deçà de la plage standard, régler VR301 (canal de gauche) et VR302 (canal de droite) de telle sorte que le niveau de fréquence soit en deçà de la plage standard.
7. Répéter les étapes 2~6 ci-dessus en utilisant la bande CrO₂ (QZZCRX) et la bande métallisée (QZZCRX) en augmentant la plage de fréquence à 12.5kHz (50Hz~12.5kHz).
8. S'assurer que le niveau soit en deçà de la plage montrée à la Fig. 9.

ESPAÑOL

METODOS DE AJUSTE Y MEDIDA

Instrumento de medición

- EVM (Voltmetro electrónico)
- Osciloscopio
- Frecuencímetro digital
- Oscilador AF

- ATT (Atenuador)
- Voltmetro CC
- Resistor (600Ω)

Ajuste Azimutal de Cabeza

1. Reproducir la porción de ajuste azimutal (8kHz, -20dB) de la cinta de prueba (QZZCFM). Variar el tornillo de ajuste azimutal hasta que las salidas del CH-I y CH-D se maximicen y la forma de onda de lissajous, como ilustrado, se acerque a grado 0.

Nota:

Si CH-I y CH-D no son maximizados en el mismo punto, ajustar al punto donde los niveles de cada canal sean maximizados e igualados.

2. Efectuar el mismo ajuste en la modalidad de reproducción.
3. Después del ajuste, aplique pintura de fijación al tornillo de ajuste del azimut.

Ajuste de Ganancia Total

1. Insertar la cinta de prueba en blanco normal (QZZCRA) y poner la unidad en modalidad de pausa de Grabación.
2. Aplicar la señal de entrada de referencia (1kHz, -24dB). Atenuar la salida de manera que su nivel se haga 0V.
3. Grabar la señal de entrada.
4. Reproducir la señal grabada en el paso 3 de arriba y asegurarse de que la salida esté dentro del valor estándar.
5. Si no está dentro del valor estándar, ajustar VR3 (CH-I) y VR4 (CH-D).
6. Repetir el paso 2~5 de arriba hasta que la salida esté dentro del valor estándar.

Ajuste de Velocidad de Cinta

1. Reproducir la porción de la cinta prueba (QZZCWAT).
2. Ajustar VR901 de manera que salida esté dentro del valor estándar.

Ajuste de Ganancia de Reproducción

1. Reproducir la porción ajustada de ganancia (315Hz, 0dB) de la cinta de prueba (QZZCFM).
2. Ajustar VR1 (CH-I) y VR2 (CH-D) de manera que la salida esté dentro del valor estándar.

Respuesta de Frecuencia de Reproducción

1. Reproducir la parte de respuesta de frecuencia de reproducción (315Hz, 12.5kHz~63Hz, -20dB) de la cinta de prueba (QZZCFM).
2. Asegurarse de que la respuesta de frecuencia esté dentro de la gama mostrada en la Fig. 6 para ambos CH-I y CH-D.

Respuesta de Frecuencia Total

1. Poner una cinta virgen normal (QZZCRA) y poner la unidad en la modalidad de Pausa de Grabación.
2. Aplicar la señal de entrada de referencia (1kHz, -24dB) a través de un atenuador.
3. Atenuar la señal por 20dB y ajustar la frecuencia de 50Hz~10.0kHz.
4. Grabar el barrido de frecuencia.
5. Reproducir la señal grabada y asegurarse de que esté dentro de la gama mostrada en la Fig. 8 en comparación con la frecuencia de referencia (1kHz).
6. Si no está dentro de la gama de frecuencia, ajustar VR301 (CH-I) y VR302 (CH-D) de manera que el nivel de frecuencia esté dentro de la gama estándar.
7. Repetir los pasos 2~6 de arriba utilizando la cinta CrO₂ (QZZCRX) y la cinta metálica (QZZCRZ) incrementando la gama de frecuencia a 12.5kHz (50Hz~12.5kHz).
8. Asegurarse de que el nivel esté dentro de la gama mostrada en la Fig. 9.